

# TRANSFORMATIONAL URBAN LANDSCAPES

INDUSTRY - INFRASTRUCTURE - LOGISTICS AND THE OPPORTUNITY IN SHIFTS



**TRANSFORMATIONAL URBAN LANDSCAPES**

INDUSTRY - INFRASTRUCTURE - LOGISTICS

AND THE OPPORTUNITY IN SHIFTS

An exegesis submitted in fulfilment of the requirements for the degree of

**Master of Architecture**

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Bachelor of Architecture

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School of Architecture and Design

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Ian Nazareth  
June 2012



**Preface / Acknowledgements**

This document forms the Appropriate Durable Record of the work completed over a period of the Master of Architecture by Research in the Urban Architecture Laboratory (UAL) at RMIT University in Melbourne. My candidature included the completion of two studio driven investigations defined by the UAL, culminating in a design-research led dissertation.

I wish to thank my senior supervisors, Simon Whibley, Gretchen Wilkins, and Nigel Bertram, for their invaluable critique, guidance, patience and encouragement.

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This Master of Architecture would not have been possible without the continued and boundless encouragement and support of my parents, family and friends. A special thanks to Natasha Maben for being a sounding board for my genius and insanity.

And finally to Mahindra, for awarding me a scholarship for post-graduate studies in architecture.

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# INTRODUCTION

GROWTH / EXPANSION / DENSITY

### Introduction

‘Urbanisation today is not only a global phenomenon of physical and cultural restructuring, but it has itself become a spatial effect of the distributed networks of communication, resources, finance, and migration that characterise contemporary life. The city today is everywhere and nowhere’ \_stan allen,<sup>1</sup>

Humanity is officially an urban species.<sup>2</sup> In 2007, for the first time in human history, more than half the world’s population now reside in urbanised areas. A substantial number of publications, editorials and writings on the city prefaced with lines not dissimilar to this, a stark revelation has been adulterated from a phenomenon than energised architects, urbanists, economists and even ‘Big Blue’ (IBM’s Smarter Cities) to a cliché for aspiration-driven planning policies (PlaNYC 2030, Melbourne 2030, Melbourne @ 5 million, Development Plan for Greater Mumbai 2014-2034 etc)

What this adage masks is the spatial realities of urban migration. The almost biblical flight to the cities is more identifiable with ‘diasporas’ or (ironically) the spreading out of people and resources, rather than extremely high densities. The repercussions of massive urbanisation is, in turn, decentralisation of industrial programs, infrastructures and resources, all of which are pushed out even further from the central city.

<sup>1</sup> Allen S., A New Synthesis of Park and City, (essay featured in) Turan N., Ramos S., New Geographies 0, Harvard University Press, 2009 p17

<sup>2</sup> Kasrada J., Lindsay G., Aerropolis, The Way We'll Live Next, Penguin, 2011, p10

The metropolitan growth boundary invariably continues to expand, as less sightly, commercial and pedestrian components of the city and the distribution networks linking them back inwards, shifts in response.

These development cycles throw architecture and urbanism into an expanded field that now, and more crucially than ever has to arbitrate public infrastructure, post-industrial cycles, brownfield remediation, landscape ecologies, employment, amenity provision and ultimately housing solutions, at greater distances from the central city. Urban growth is closely followed by land pressures and the reorganisation of program. The city is altered and transformed more rapidly than ever before. Cities around the world are grappling with population growth on one hand and elevated concerns about connecting them across larger distances on the other. Melbourne has begun to confront these issues with a polycentric city model. Cities now recognise the hidden costs of the zoned urban model.<sup>3</sup> The fallout of the continued use of the discourse of zoning is fundamental to spatial and programmatic responses, and is revisited in each project.

A distributed urbanism is an equilibrium between the forces of the central nuclear core and the radiating patterns of growth, activity and their inter-communication between the dynamics that influence their interaction. The core of this development is not so much a blanket redevelopment, but the breaks resulting from consistent intervals and interruptions or urban processes. Which is to say that some typologies of developments stabilise rapidly, whereas, others follow a measured process of adjustment and

<sup>3</sup> Rogers R., Cities for Small Planet, Faber and Faber Limited, 1997, p38



assimilation. Vast established expanses of the city locate themselves spatially between these staggered or staged responses and often resist transformative schemes. The fluctuating boundaries within the city and inner urban areas, now negotiate far more complex and intricate conditions. The dynamics that govern the movement of economic and manufacturing activity are not always within the urban realm and more often than not, are beyond the scope of the contemporary city. These shifts are directly linked to global cycles of production, economies of scale, consumption, infrastructure and the networks of distribution.

In Mumbai, the closure of textile mill lands changed the composition of land use in the central city. The re-distribution of port activity away from Mumbai's harbour to new ports in the region, potentially releases vast acreages of land for development. Density of industrial and logistical activity at Fishermans Bend in Melbourne, is linked directly to the port operations. The recent strategy to alter its distribution networks has been largely responsible for the suboptimal use of built infrastructure near the port as well as the relocation of industrial activity. New infrastructure like the Eastlink, has increased the rate of transformations in Melbourne's south-east. (especially industrial activity in Dandenong). The new freight delivery models have also impacted areas like Sunshine and Wallan that are emerging as distribution hubs.

The projects undertaken as part of this thesis examine the relationships between these shifting industrial practices in the context of increasing urbanisation. The work focussed on logistic networks and the temporal, strategic and opportunistic transformations of the urban landscape that

assert themselves on the collective form of the city. Through a series of writings, speculative experiments, and projects, the work seeks to accelerate the discontinuous density of change, along with concurrent themes and trajectories. The result is an amplification of relationships that are forged between both interconnected and seemingly unrelated entities. The research identifies particular socio-economic conditions affecting the increments of contemporary urban development, and proposes a series of methods and interventions through which urban form can be reconstituted, and future change may occur.

**Instead of removal of industrial and replacement with residential, how might one propose a model of urbanism that can be created out of these activities in common, one that builds a new and complex urbanism from the different forces, and timelines, given the existing and new occupations of industrial inner-city sites?**

'The paradox of the city is that it intrinsically demands design, yet inherently resists it.'<sup>4</sup>

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<sup>4</sup> Cuff D., Sherman R., *Fast-Forward Urbanism, Rethinking Architecture's Engagement with the City*, Princeton Architectural Press, 2011 p14



# PRECEDENTS

CONTEXTUAL / ARCHITECTURAL



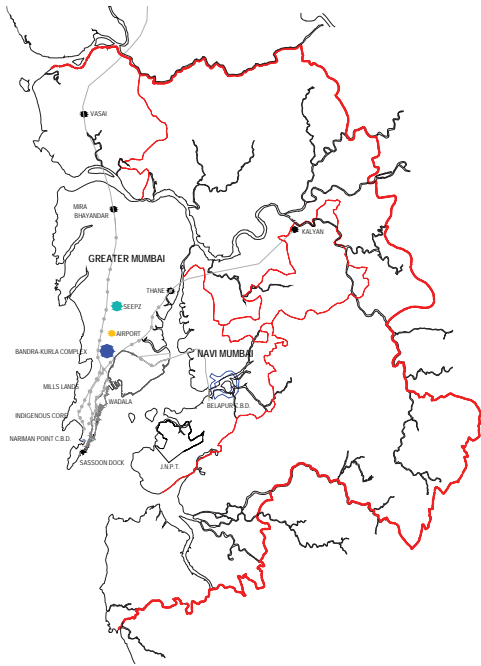
Precedents have informed the process of research and design at various levels. These projects differ vastly in scale and context and have been organised as follows:

**Contextual Precedents** that look at two issues in Mumbai, establish a backdrop and broader scheme of understanding industry and networks of distribution in the context of post-industrialisation and the contemporary city. Mumbai was chosen as it is a city I am familiar with and more importantly it is a rapidly growing metropolis that shares similar urban issues as Melbourne. (Textile Mill Lands, Eastern Waterfront)

**Architectural Precedents** from which observations and inferences have been drawn. This series includes built works as well as speculative and abstract projects that have influenced urban and architectural responses as well as representation techniques. (Logistical Activity Zone, Potteries Think Belt, Parc de la Villette, Le Fresnoy Art Centre, Levitt Pavilion and Kaohsiung Port Station)

*Additional project-specific precedents and references are discussed in conjunction with supporting projects.*

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01: plan of mumbai metropolitan region  
 image source: Urban Design Research Institute  
 02: textile mill lands, mumbai  
 image source: Urban Design Research Institute

### Introduction

Mumbai is actively constructing and redefining its relationship with the greater metropolitan region as well as the spaces and voids that develop internally through the shifting and expansion of specialised zones. The passing of the Industrial Relocation Policy, de-industrialisation and closure of cotton mills, was accompanied by the release of 200 hectares of textile mill land in central Mumbai for private development. Almost simultaneously, the new port at Nhava Seva (and a series of smaller ports proposed across the state) and shifting models of logistical operations, witnessed the decline in port and freight activity of Mumbai's harbour along the city's eastern waterfront. In comparison, the Eastern Waterfront is 700 hectares of land controlled by the Mumbai Port Trust, where industrial dross has spawned a desolate landscape of temporal and informal migrant economies. Opportunism now inhabits a region that will inevitably share the vision and follow the trajectory of the textile mill lands.



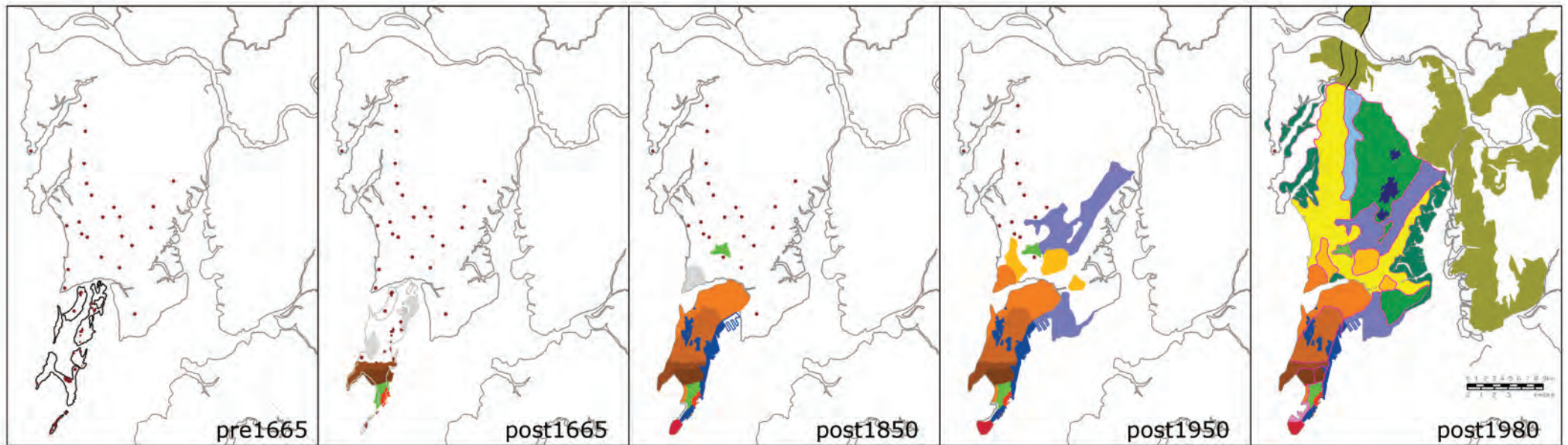
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### Textile Mill Lands

Bombay now Mumbai, originated as a cluster of fishing communities along an archipelago of seven islands on India's west coast. The city grew in prominence when the British gained control and developed it into a trading town. Consequently, Bombay was one of the trading posts of the British East-India company. With a seaport as a pivot, the city established and thrived as an industrial centre, accounting for the economic opportunity, prosperity and migration to the city from the rest of India. Large parcels of land were leased to textile entrepreneurs and cotton weaving and spinning were the backbone of the economy of the city. By the 1900s there were 136 mills in the city,<sup>1</sup> but by the 1950s the textile mills began to face major setbacks, ending with prolonged labour strikes in the 1980s. Mills were either nationalised or closed down, and the vast acreages of land on which they stood continued to spiral in value. The land in the region of 200 hectares in central Mumbai had a combined property value estimated around INR 75000 million<sub>2</sub> (approximately AUD 3.7 billion in 1994).

<sup>1</sup> Dwivedi S., Mehrotra R., Bombay: The Cities Within, Eminence Designs Pvt. Ltd, 2001, p164

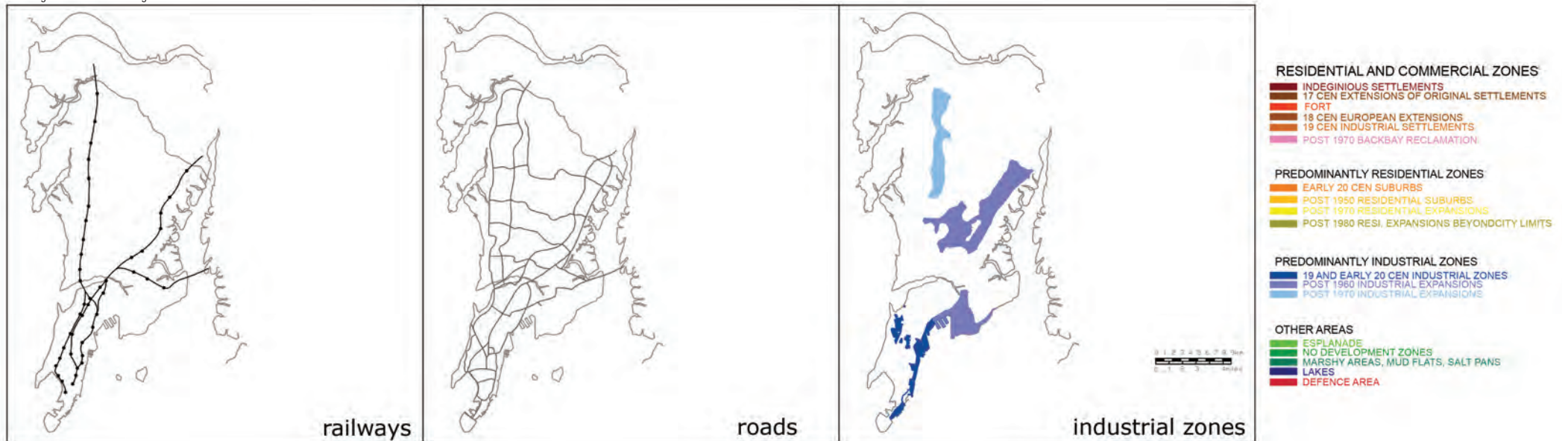
<sup>2</sup> Dwivedi S., Mehrotra R., Bombay: The Cities Within, Eminence Designs Pvt. Ltd, 2001, p321



03: chronological development of the city of mumbai  
image source: mumbai reader 09

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04: networks: railways, roads and industry  
image source: Urban Design Research Institute







05

05: textile mill land, mumbai  
image source: Skyscraper City

06: the city as a construction site, mumbai  
image source: Humayunn Peerzaada

07: wetlands and mangroves, eastern waterfront, sewri  
image source: Karin Schierhold

Land sharks and bureaucratic agencies became involved in piecemeal real estate developments in these localities.<sup>3</sup> Today most of this land is either developed, currently under development or auctioned for private development.

While the migrant workforce, residing in mass housing units constructed in the vicinity of the mills, developed stronger community ties and a rich network of physical and social infrastructure.<sup>4</sup> The new office blocks and luxury apartments are now transforming the former character and cultural milieu of these precincts.

Changes in transportation, economics and demographics have altered the land use composition and drastically affected the region's ability to compete nationally and internationally. The inherent motivation to sell the land is inevitable, but the nature of implementation that overlooks or disregards environmental standards and impact, urban infrastructure, standards of living is disputed. Relying completely on economic models for attracting high-turnover business activities create precinct-scale spatial segregation.

<sup>3</sup> Dwivedi S., Mehrotra R., Bombay: The Cities Within, Eminence Designs Pvt. Ltd, 2001, p321

<sup>4</sup> Mhatre P., Downtown Revitalization: Lessons for Mumbai's Mill Lands, Class Papers, GEOG 616: Urban Geographies, Texas A&M University (web link: <http://urbanplanningblog.com/papers/Downtown%20Revitalization%20Lessons%20for%20Mumbai's%20Mill%20Lands.pdf>) p6 accessed on January 15, 2012



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### Eastern Waterfront

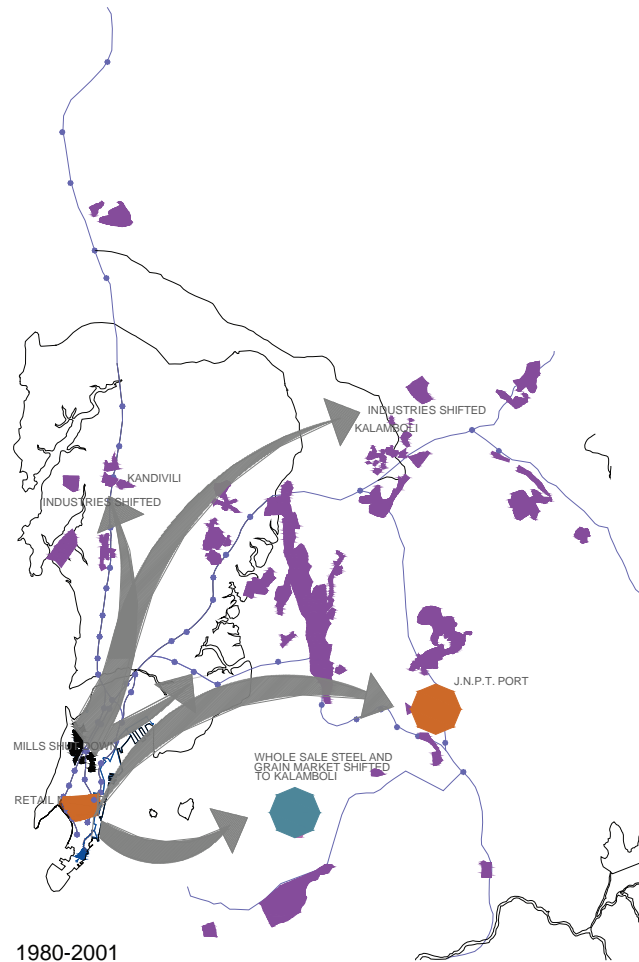
Mumbai's harbour which consists of the naval dock and operational port, is a component of a larger region that extends across the city, spanning 30 kilometres from north-south. In its present land use structure these extended areas envelop or adjoin the city's central business district, storage warehouses, informal ship-breaking yards, environmentally hazardous industries, toxic fertilizer and petroleum refineries, salt pans and an atomic research facility located adjacent to environmentally sensitive wetlands and mangroves.





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1980-2001

08: ship breaking, eastern waterfront

09: shifting of industry, decline of port activity  
image source: Urban Design Research Institute

10: boundary of oil installations, wadala, mumbai  
image source: Urban Design Research Institute

11: under used infrastructure, operational docks  
image source: Urban Design Research Institute

12: boundary of operational docks, physical barrier  
image source: Urban Design Research Institute

13: derelict cotton warehouses, cotton depot  
image source: Urban Design Research Institute

14: perceived edge, eastern waterfront, mumbai  
image source: Urban Design Research Institute

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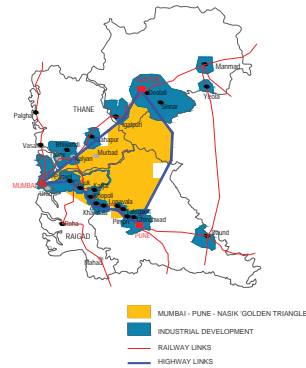


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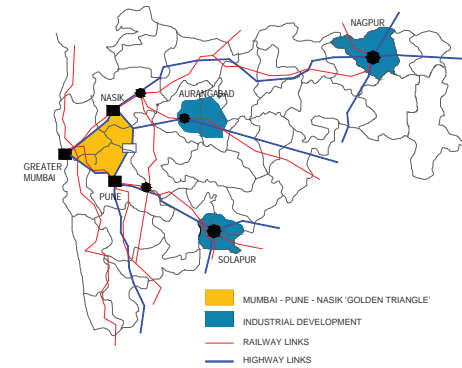
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15: golden triangle, mumbai - pune - nashik  
image source: Urban Design Research Institute

16: growth corridors, state of maharashtra  
image source: Urban Design Research Institute



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As the city expanded and warehousing facilities align themselves along new growth corridors, large existing warehousing spaces and infrastructure became vacant. At such a time, the port traffic started to decline as its volume got distributed to newer ports in Maharashtra (the state of which Mumbai is the capital). It was around this period that the mill lands were auctioned at well beyond their market value and this once again drew attention to the real-estate value of the land held by Mumbai Port Trust. The indecision by the port trust, subsequent government rulings and advocacy have resulted in a deadlock, and ensured action against the sale of land, albeit temporarily. The area continues to decline in industrial use and sub-optimal port activity with the emergence of rental premises for technology service providers that represents the shifts in the economic landscape. The existing piers have generated an economy of their own, as a ship-breaking yard. However this activity is informal in nature, and often undertaken without the appropriate safety procedures. Ship-breaking has stimulated a burgeoning occupation of scrap dealers and recyclers.

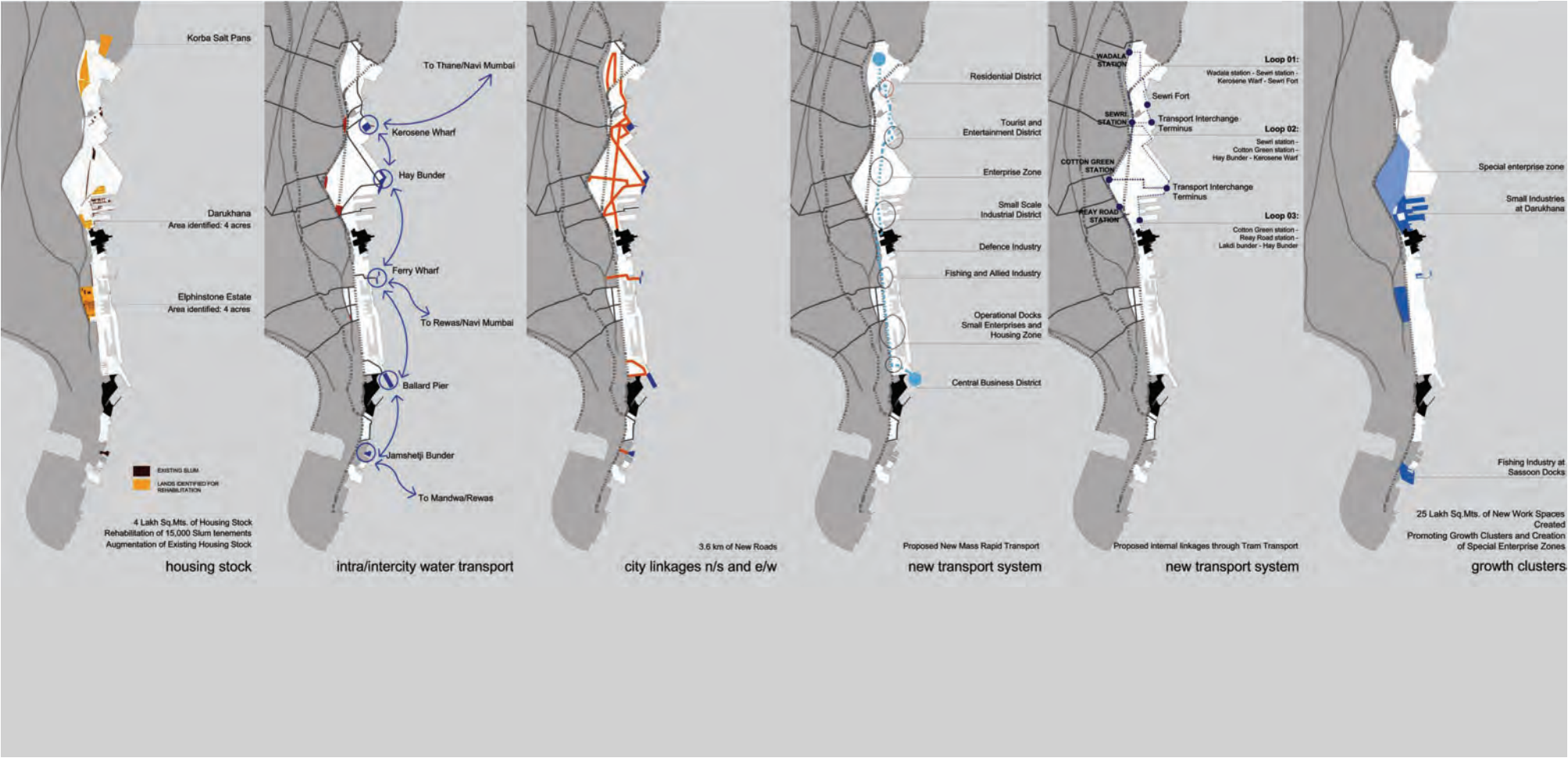
While the nature of the informal sector has developed a particular urbanism, the broader picture reflects the potentials of this area for the metropolitan and regional context. The urban vision alludes to the potential to decongest the city within its own limits through the release of land made available for public use through open spaces, recreation grounds, affordable mass housing and rental housing, in addition to maintaining a broader spectrum of commercial activity that encompasses a wider demographic, economically and socially.

The operational docks and a large extent of the industrial land is separated from the city by a port wall, a boundary that for almost a century has ensured

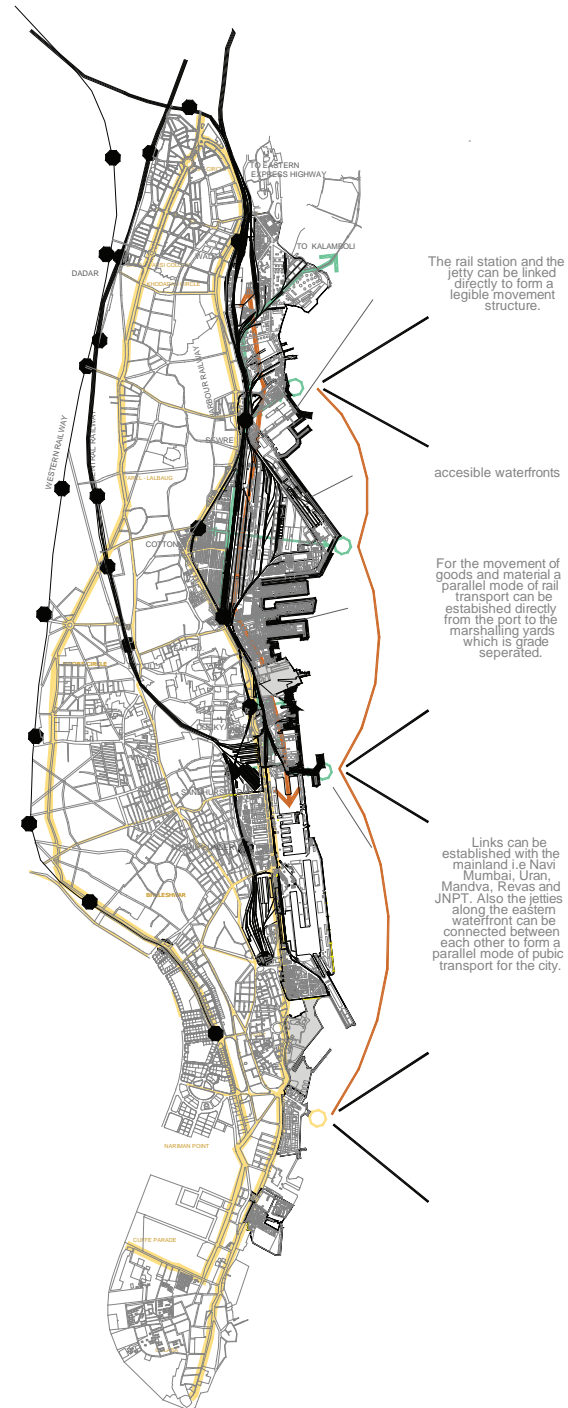
that this area is for all practical purposes inaccessible, and hence beyond the imagination of the contemporary city. Unlike the western waterfront that is integral to the perception of the city, this real and perceived edge highlights the unequal densities and infrastructure pressures in the city, that will only be amplified by future developments.

A series of studies by the Urban Design Research Institute (fig.17) established a vision plan that addresses the issues, land pressures and potentials of the region through increasing the housing stock, creating accessible waterfronts, proposing water transport and mass transport systems while reinvigorating growth clusters and enterprise zones.

17: proposal for development of eastern waterfront mumbai  
image source: Urban Design Research Institute







## Conclusions

Redevelopment and revitalisation efforts, irrespective of the scale of operations create a friction between economic benefits, potential of the region and the social equity that it maintains.

The initial transformation plan for Mumbai, 'Vision Mumbai'<sup>5</sup>, yielded to the temptation to imagine Mumbai as Shanghai, with a goal of creating a world-class city through upgrading the workforce and addressing changing dynamics from an economy of production to one of service providers. Thus post-industrial development within the city ignores concerns of creating equitable societies that define the character of the region, and unilaterally focussed its attention on economic grounds and tax revenues generated by service economies. Consequently, changing the physical landscape of a region imposes social costs that are unavoidable.<sup>6</sup>

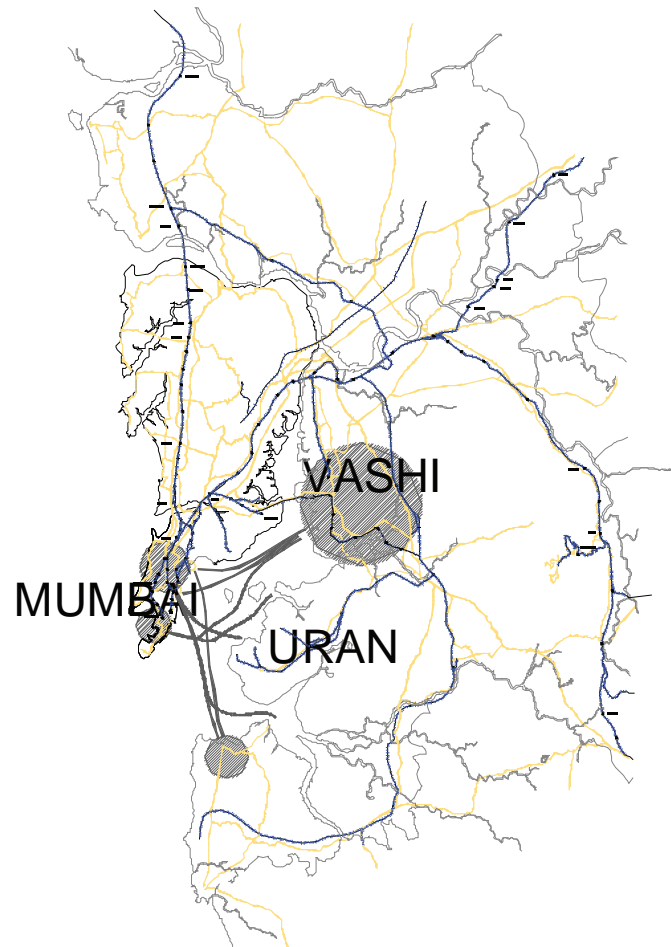
The underlying physical and functional structures are maintained through a combination of procedures that viably integrate adjacent areas and existing networks. The absence of a development plan, reduced large urban regions into architectural projects or individual plots developed in isolation. This resulted in a series of themed environments through high-rise residential enclaves, business parks, malls etc., that employed large scale gentrification and deals with only a fraction of the demographic.

<sup>5</sup> Bombay First – McKinsey Report, Vision Mumbai: Transforming Mumbai into a World-Class City, Mumbai, 2003

<sup>6</sup> Mhatre P, Downtown Revitalization: Lessons for Mumbai's Mill Lands, Class Papers, GEOG 616: Urban Geographies, Texas A&M University, p15

The case of the Mill Lands and the Eastern Waterfront are not isolated instances, neither are they native to the Indian context. It is a reflection of global trends of moving production away from the cities and more efficient supply chain management. These examples closely relate to the relocation and prioritisation of freight distribution across metropolitan Melbourne, and concurrent proposals for inner-city and inner-urban densification on post-industrial land associated with port operations at Fishermans Bend.

Urban development and the broader scenario of urbanism in Asia contend with numbers almost unimaginable in an Australian context. However there exist many parallels that highlight the shifts in social and economic structure that are driven by broader trends in production and distribution. The examples from Mumbai serve as an accelerated learning cycle, and in many ways precede the velocity of industrial cycles and logistic shifts. The precedents test ideas from this urban and economic context in a different backdrop but through a similar lens, asserting a similar contextualisation of potential and friction in Mumbai and Melbourne. Through the references, holistic integration will be measured through an equivalence between addressing the historic isolation of these areas from its surroundings, the ability to build an incremental policy and more responsive spatial and programmatic organisation that offer a more elastic and resilient form of urbanism. The tracing and retracing of expansive frameworks clarify and influence temporal shifts. Planning policies that seek to bypass the formal and informal industrial networks, and the regional context and focus on a closed society development can prove detrimental to the intrinsic structure of the city as well as the saturate networks of flow: resource based and information.



19: networks and potentials in the region, mumbai  
image source: Urban Design Research Institute

20: organisation: corridors and connectivity, stitch map  
image source: Allen, 1999

21: anticipation: program scores, active and passive programs  
image source: Allen, 1999

22: plan montage of scenarios  
image source: Allen, 1999

23: organisation network, site networks  
image source: Allen, 1999

### Logistical Activities Zone (Barcelona)

This project is a proposal for the Logistical Activities Zone adjacent to the proposed area for the extension of the existing port facilities in the municipality of Barcelona. The design strategy adopted by Stan Allen examines the potentials of infrastructure urbanism, while setting down the traces of an architectural infrastructure that would allow flexible development.

In addition to the conventional representation techniques (plans, sections, elevations) the project used diagrams, maps, scores and scripts. In the infrastructural approach, limits to future developments are set materially and not through zoning. The notational scheme is set out to imagine multiple program scenarios and chart their interaction.

Surfaces: Borrowing a concept from landscape ecology, the site area is organised into patches (green areas) and corridors (infrastructural pathways containing movement, services and function), creating a mosaic of natural and artificial surfaces

Movement: Boundary and through roads are connected into the present system of urban circulation. Pedestrian movement is at an upper level within the trusses supporting a continuous roof structure.

Program: The four programmatic categories proposed are: work (workshops, ateliers for artists), display (showrooms and exhibition facilities), service (vehicle services, hotel and office space) and recreation (sports facilities and open green spaces)

Patch Typologies: Instead of proposals for future occupation of the site, a series of loose organisational typologies are proposed depending on scale, density and organisation. Patches suggest possible program depending on scale and function as habitat, barrier etc. as per organisation and density.

Infrastructure: The architectural space is a continuous structure supported on a regular grid. This establishes a framework within which collective contributions can be organised using a definite spatial configuration.

The inferences from this project were fundamental to the development of the final project in Sunshine, which specifically defines the program with a less restricted architectural expression. Stan Allen's project on the other hand, creates a structured field condition that is architecturally specific yet programmatically indeterminate. However, these contrasting strategies speculate a future of the site, that is free to unfold beyond the limits of a master plan.

This project highlights an approach that does not map an exact correspondence between architecture and activity, but articulates a degree of play between form and event, a loose fit of organisation and program.

project description extracted from *Infrastructural Urbanism*, Logistical Activities Zone, featured in Allen S., *Points +*

Lines: *Diagrams and Projects for the City*, Princeton Architectural Press, 1999, p73-74

### **The Potteries Thinkbelt (Staffordshire, United Kingdom)**

The Potteries Thinkbelt was a theoretical project and a critique of the university system which Cedric Price believed kept education separate from the masses. Price proposed a science and technology teaching institution which was a series of interconnected faculties and student housing. The Potteries Thinkbelt was linked through the underused road and rail networks. The rail connections acted as a link between sites but also functioned as teaching rooms, labs and workshops through container styled teaching units. The ambition of this institution was to create employment and innovation in the North Staffordshire Area.

The project is significant, in that it addressed local unemployment, a stagnant local housing programme and a redundant rail network. The project utilised vast areas of unused, unstable land, consisting mainly of old coal-working and clay pits, while addressing the need for scientists and engineers. The basis of this project is creation of economic opportunities in a post-industrial context and offers a speculative strategy for occupancy of large areas. The proposal factors infrastructure networks into the addition of new programs and user groups that benefit from proximity and connections.

- 26: composite networks parc de la villette  
image source: Bernard Tschumi Architects
- 27: grids, reference points, signifiers, overlay, parc de la villette  
image source: Bernard Tschumi Architects
- 28: site plan in context, parc de la villette  
image source: Bernard Tschumi Architects
- 29: facade and roof, exterior view, le fresnoy art centre  
image source: Bernard Tschumi Architects
- 30: ultra-technological roof, interior view, le fresnoy art centre  
image source: Bernard Tschumi Architects
- 31: strategy of the in-between, le fresnoy art centre  
image source: Bernard Tschumi Architects

### Parc de la Villette (Paris)

Parc de la Villette is the 'urban park for the 21st century' developed around a complex program of cultural and entertainment facilities, previously a site occupied by slaughter houses. It can be perceived as one large building: a discontinuous building but a single structure nevertheless, overlapping the site's existing features and articulating new activities.

Rather than landscape and nature being major elements in the design, Bernard Tschumi focussed on reconfiguration and discovery as the principal concept for creating a cultural space for natural and man-made elements to interact. A grid creates a series of reference points and the intersections are detailed as 'signifiers'. Additionally, the project included a series of parks with activities that include workshops, a gymnasium and bath facilities, playgrounds, exhibitions, concerts, science experiments, games and competitions, in addition to the Museum of Science and Technology and the City of Music on the site. These are uses not traditionally considered as part of a public park.

The conceptual composition and arrangement of spaces as well as the nonstandard programming of spaces influenced the projects at Dandenong and Fishermans Bend.

project description extracted from Bernard Tschumi Architects (web link: <http://www.tschumi.com/projects/3/>)  
accessed on July 20, 2011

### Le Fresnoy Art Centre (Tourcoing, France)

Bernard Tschumi's approach to integrating new areas with old for an arts centre was suspending a large ultra-technological roof. The roof placed over the existing 1920s structures was pierced by cloud-like glass openings and contained the necessary duct work for heating, ventilation, and air conditioning.

The aim was to develop a new model of a centre through combinations of old and new development. The addition of a roof adds a new dimension of space between the tops of existing roofs and the base of the added roof. These spaces are public walkways with installations and film projections. The 'umbrella' scheme aims to accelerate chances by combining diverse elements, juxtaposing the great roof, the school and research laboratory, and the old Fresnoy.

This project is an example of a 'strategy of the in-between' utilising the existing and adding minimum architectural elements to influence interaction of program and user groups.

project description extracted from Bernard Tschumi Architects (web link: <http://www.tschumi.com/projects/14/>)  
accessed on July 20, 2011



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### Levitt Pavilion (Bethlehem, Philadelphia )

The Levitt Pavilion is part of a cluster of newly built cultural facilities developed on the grounds of the former Bethlehem Steel Mill. The imposing structures of the old blast furnaces are repurposed as a backdrop to the Pavilion's performances spaces.

The Wallace Roberts and Todd scheme, looked at the redevelopment of the entire site and designing a 10 acre central core which includes multiple performance venues, plazas and parks - along with the Levitt Pavilion which is a stage and origami-like roof that sits in front of the furnaces.

This project is vital in framing the context of post-industrial land and suggests the first phase through which industrial sites can be made available for public use through cultural programs. The scheme makes historic references to the context of the site and location by using the steel stacks as a backdrop while simultaneously integrating new activities and program.

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project description extracted from Wallace Roberts and Todd (web link: <http://www.wrttdesign.com/>) accessed on July 25, 2011

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### Kaohsiung Port Station (Kaohsiung, Taiwan)

The 15.42 hectare site is located between the Hamasen and Yenchen historic commercial centres and at the intersection of three of Kaohsiung's thriving neighbourhoods. The AGER Group's entry for the Kaohsiung Port Station Urban Design competition had dual goals of cultural preservation and urban development, achieved through a three phased development. AGER incorporated the economic trends of domestic consumer market growth, office and retail demand, housing demand, and the expected growth of Taiwan's tourism industry in the proposal. There was consideration for the brownfield soil conditions, building re-use, and disaster resilience to help form a sustainable strategy for the project over time.

**Phase 1:** Developing a transportation and industry museum, preserving key portions of the railway for public and special event use, and transforming other portions of the rail yard into an art exhibit / market and rail-scape park corridor.

**Phase 2:** Hotel with conference centre and executive apartments.

**Phase 3:** Buildings based on the Southeast Asian shop-house typology with public corridors and civic spaces integrate existing neighbourhoods.

Phasing is a critical component of the process of recovery, especially in post-industrial contexts and brownfield sites. Employing a variety of components (rail, walk, building, landform), this approach develops a phased strategy instead of a finished plan to direct and capture the diverse forces and flows within the site. Creating flexible conditions is vital for future development.

project description extracted from AGER Group (web link: [http://www.agergroup.com/planning\\_kaohsiung.html](http://www.agergroup.com/planning_kaohsiung.html)) accessed on September 10, 2011

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32: redevelopment plan, bethlehem steel mill  
image source: Wallace Roberts and Todd

33: blast furnace as backdrop for events  
image source: Wallace Roberts and Todd

34: levitt pavilion  
image source: Wallace Roberts and Todd

35: railscape park, kaohsiung port station  
image source: AGER Group

36: aerial perspective in context, kaohsiung port station  
image source: AGER Group

37: phased development plan, kaohsiung port station  
image source: AGER Group



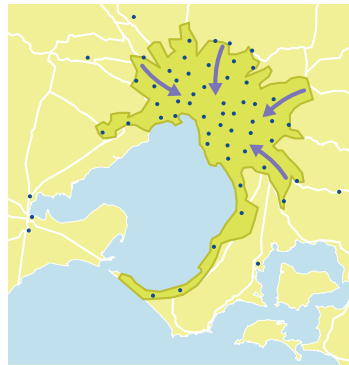
# CONTEXT

MELBOURNE 2030 / MELBOURNE @ 5 MILLION / FREIGHT FUTURES /  
INTERMODAL FUTURES / REGIONAL CONTEXT

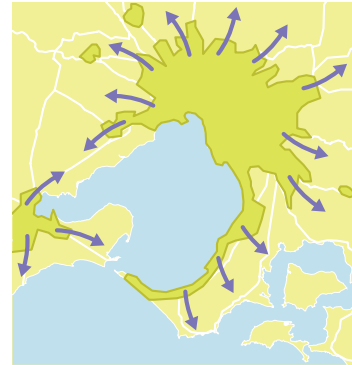
01: compact-contained  
image source: Melbourne 2030

02: dispersed  
image source: Melbourne 2030

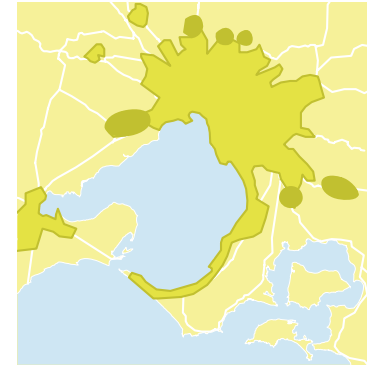
03: growth areas  
image source: Melbourne 2030



01



02



03

### Introduction

In 2011 the Economist Intelligence Unit placed Melbourne as the world's most liveable city. The survey is by no means definitive and its criteria convolute certain aspects, as it evolved from a model used by Human Resource Departments to calculate allowances for expatriate relocation packages.<sup>1</sup>

However, quality of life and its associated liveability index is something Melbourne takes rather seriously. Melbourne is projected to reach a population of 5.5 million by 2036<sub>2</sub> through natural increase and immigration. Imminent growth and aspiration to maintain a high standard of living, is a factor that reflects in the city's most comprehensive vision plan 'Melbourne 2030 Planning for Sustainable Growth'<sub>3</sub> and resonates through the amended Melbourne @ 5 Million.<sub>4</sub>

<sup>1</sup> Economist Intelligence Unit, Global Liveability Report (web link: [http://www.eiu.com/site\\_info.asp?info\\_name=The\\_Global\\_Liveability\\_Report&rf=0](http://www.eiu.com/site_info.asp?info_name=The_Global_Liveability_Report&rf=0)) accessed on March 4, 2012

<sup>2</sup> Victorian Government Department of Planning and Community Development, Victoria in the Future Fact Sheet, 2008, p3

<sup>3</sup> Victorian Government Department of Sustainability and Environment, Melbourne 2030- Planning for sustainable growth, Melbourne, 2003

<sup>4</sup> Victorian Government Department of Sustainability and Environment, Melbourne 2030: a planning update - Melbourne @ 5 million, Melbourne, 2008

Melbourne 2030 describes a series of directions of which policies relating to 'a more compact city', 'better management of metropolitan growth' and 'network with regional cities' are fundamental to the positioning of the subsequent projects.

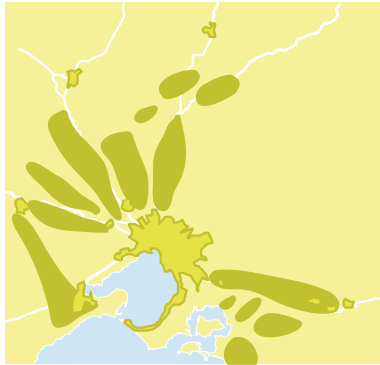
### Central Activities Districts / 'a more compact city'

The compact city model looks at maximising the potential of existing settlement patterns and investments in infrastructure through the concentration of new development in and around activity centres.

Activity centres are a condensed areas of areas with not only employment and retail, but also services, recreational and community facilities, and efficient transport links that are provided over longer hours. Through a prescribed role and function, these centres are defined in hierarchy as Central Activities District, Principal Activity Centres, Major Activity Centres, Specialised Activity Centres and Neighbourhood Activity Centres. The notion of the Central Activities District within Melbourne 2030 referred to a 'Central Melbourne' which included the three municipalities of Melbourne, Yarra and Port Philip.<sub>5</sub>

In total it proposed 25 Principal Activity Centres, 79 Major Activity Centres, and 10 Specialised Activity Centres that at a metropolitan level begin to read as a network of activity centres linked by a principal public transport network of existing and proposed routes.

<sup>5</sup> Victorian Government Department of Sustainability and Environment, Melbourne 2030- Planning for sustainable growth, Melbourne, 2003, p47



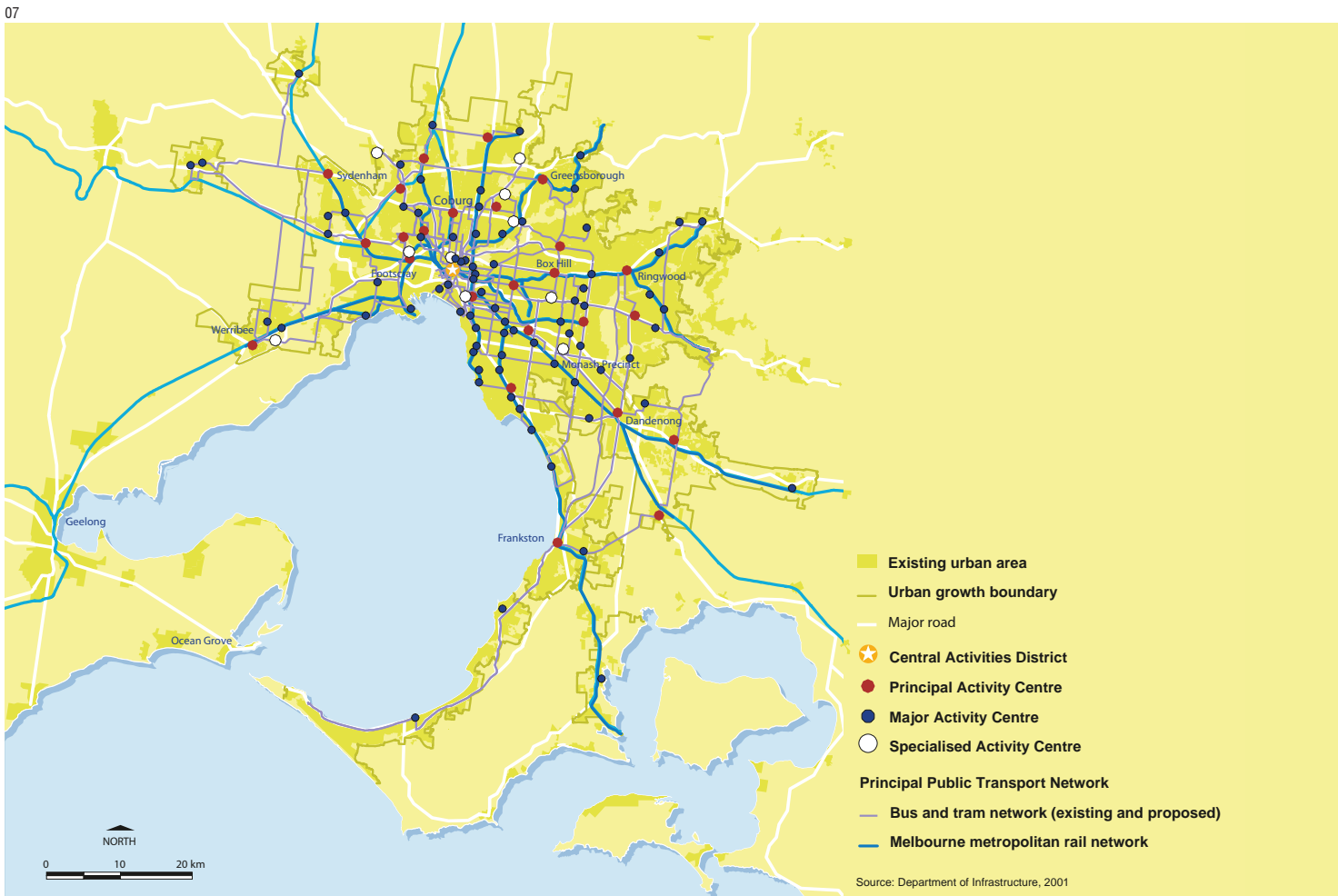
04



05



06



07

#### Melbourne and the Region

04: regional dispersed  
image source: Melbourne 2030

05: major regional centres  
image source: Melbourne 2030

06: multiple centres  
image source: Melbourne 2030

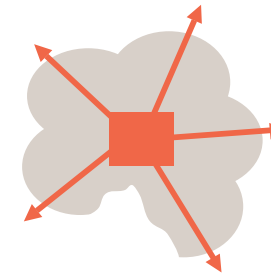
07: network of activity centres  
image source: Melbourne 2030,  
Department of Infrastructure

The successive Melbourne @ 5 million conveyed more detail with regard to employment corridors and employment precincts, but more importantly redefined 'central activities districts' as 'the highest order activity centres with the greatest variety of uses and functions and the most intense concentration of development'.<sup>6</sup> The critical change now referred to a refined settlement pattern to accommodate higher level of growth and a multicentric city structure through re-identifying PACs, MACs and SACs as Central Activities Districts and promoting (a more manageable) six locations for investment and planning, viz Box Hill, Broadmeadows, Dandenong, Footscray, Frankston and Ringwood. While the selection criteria is not entirely clear, the CADs are a network of distributed CBD-like centres connected to anticipated growth areas and transit oriented development.

6 Victorian Government Department of Sustainability and Environment, Melbourne 2030: a planning update - Melbourne @ 5 million, Melbourne, 2008, Glossary, p0

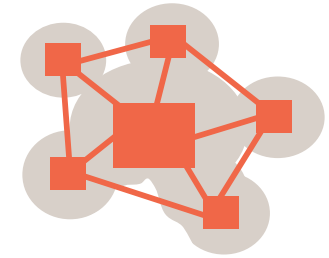
08: single centre vs multi-centre city structures  
image source: Melbourne @ 5 million

09: central activities districts  
image source: Melbourne @ 5 million,  
Department of Infrastructure



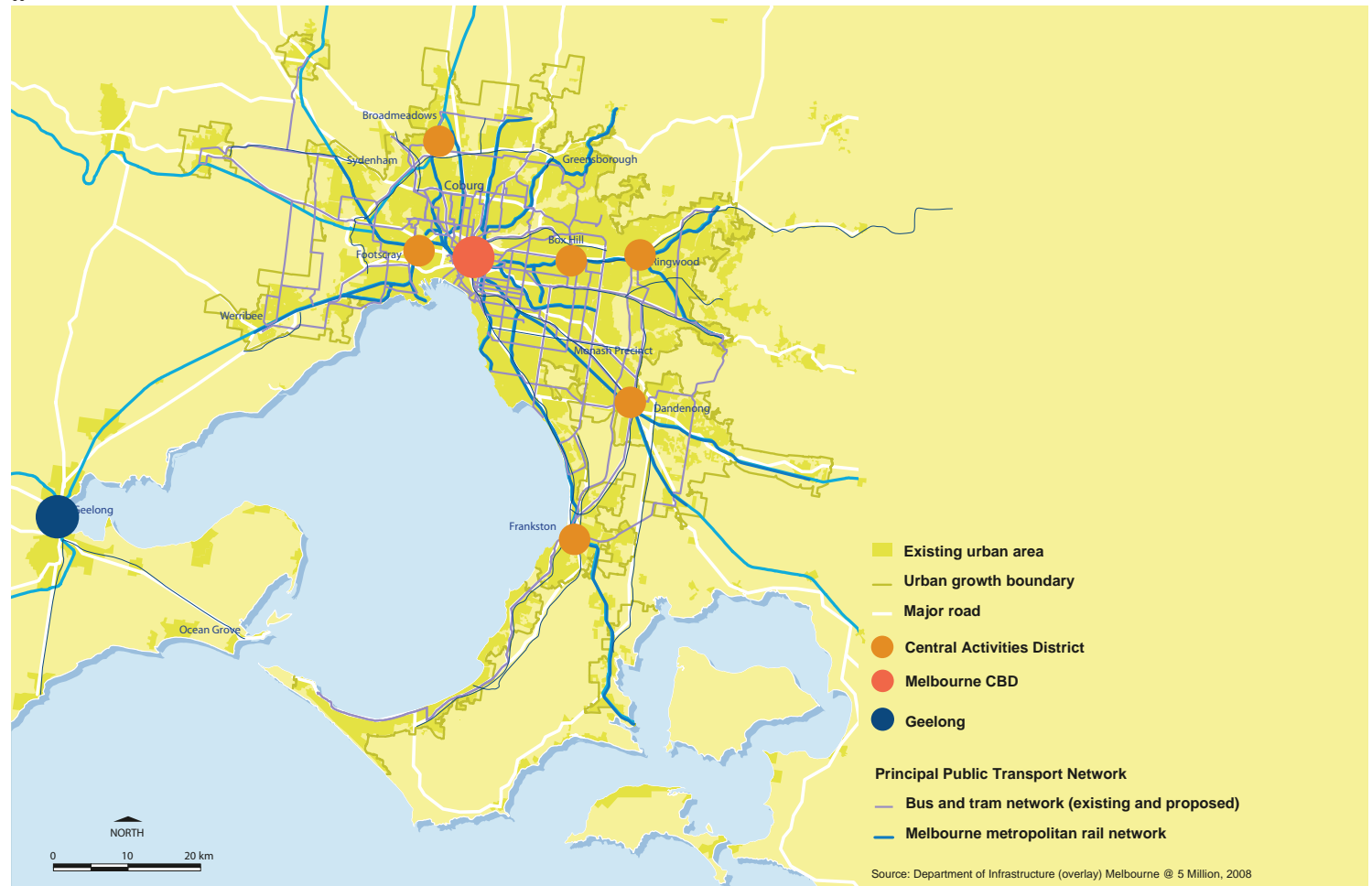
One Major Centre  
'Monocentric'

08



Multiple Major Centres  
'Polycentric'

09



### Growth Areas / 'better management of metropolitan growth'

The average density of the metropolitan area in Melbourne is approximately 14.9 persons per hectare,<sup>7</sup> which is well below the average densities of international cities of comparable population and standard of living. (e.g. Montreal 33.8, Toronto 41.5) As a means to regulate outward development of the city, Melbourne 2030 established an Urban Growth Boundary (UGB). The UGB will protect the green wedges of metropolitan Melbourne from inappropriate development and manage the sequence of development in growth areas so that services are available from early in the life of new communities.<sup>8</sup> That is to say, development would be discontinued where a high standard and high capacity public transport network is not available. The UGB recognised Melbourne's growth areas as Melton–Caroline Springs and Wyndham in the west, Hume and Whittlesea north / northeast with Casey–Cardinia to the southeast. This followed with a series of investigations in these areas through the establishment of the Growth Areas Authority, (released in a study 'A Plan for Melbourne's Growth Areas',<sup>9</sup>) that continues to alter this boundary adding urban zones to metropolitan Melbourne.

<sup>7</sup> Victorian Government Department of Sustainability and Environment, Melbourne 2030- Planning for sustainable growth, Melbourne, 2003, p60

<sup>8</sup> Victorian Government Department of Sustainability and Environment, Melbourne 2030- Planning for sustainable growth, Melbourne, 2003, p59

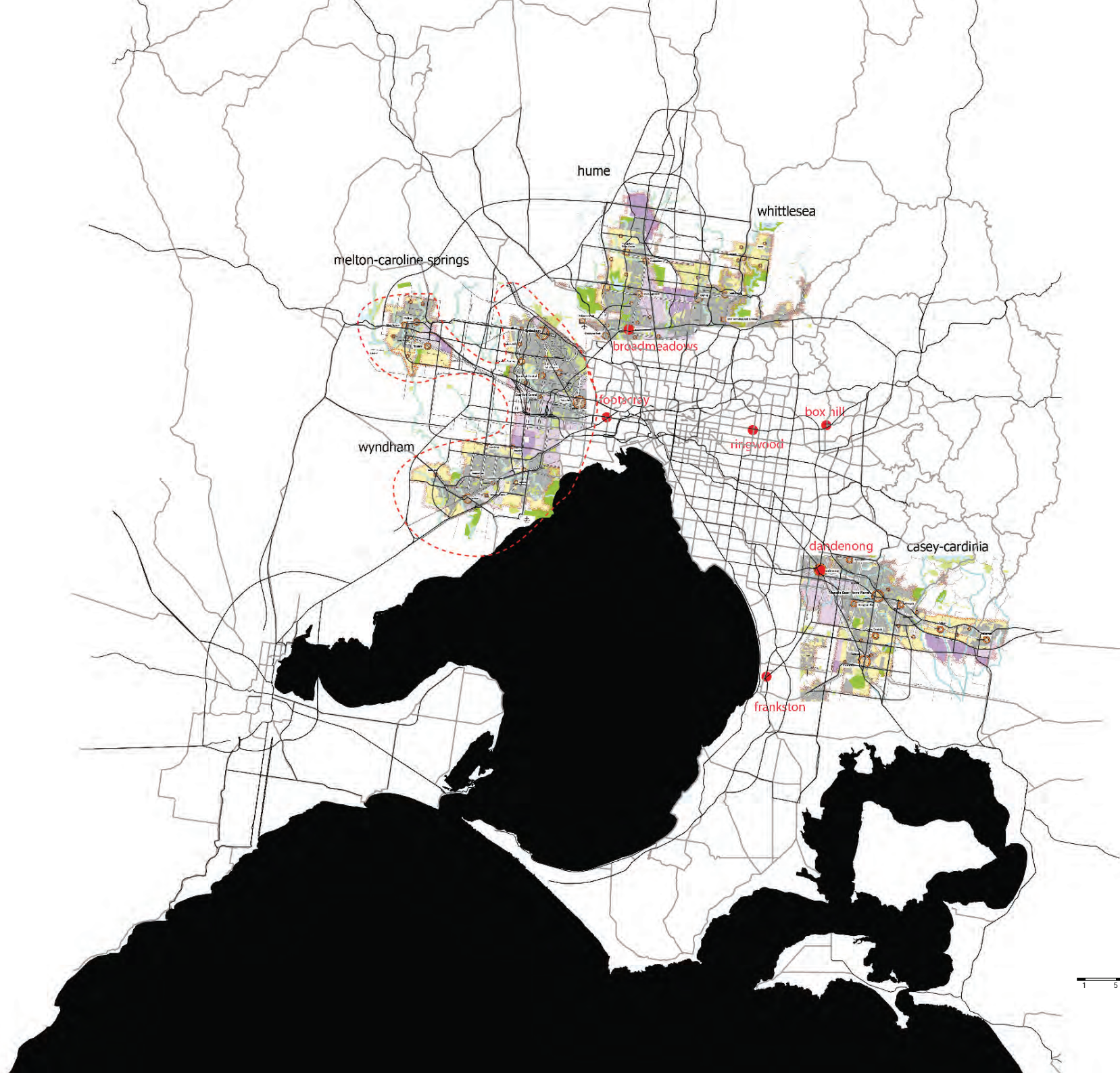
<sup>9</sup> Victorian Government Department of Sustainability and Environment, A Plan for Melbourne's Growth Areas, 2005

When these high growth areas, which are inherently linear stretches of urban land, are positioned alongside the investment for radial densification at CADs like Box Hill, Broadmeadows, Dandenong, Footscray, Frankston and Ringwood, these domains translate as a layering of strata of corridor growth and nodal districts; actual growth areas and predetermined consolidation points. (refer fig.12 p36) The programmatic connectors and infrastructure emerge as domains of opportunity and potential that start to connect broader elongated systems of multi-programmed spaces, transit hubs and interchange points, distribution centres as well as landscape ecologies.

<sup>10</sup>: melbourne growth diagrams 1840, 1888, 1928 and 1951  
image source: MMBW, Harris 2005

<sup>11</sup>: new land added urban growth boundary 2010  
image source: Department of Planning and Community Development









13

14

### Regional Context / 'network with regional cities'

The framework broadly considers the accelerated development of the Latrobe Valley (along with Geelong, Ballarat, Bendigo) and encourages the concept of a networked city. Regional planning will ensure that these cities and surrounding regions can take advantage of opportunities for growth.<sup>10</sup> Over time, this will encourage consolidation into places where infrastructure and services are already in place.<sup>11</sup> 'Freight Futures',<sup>12</sup> details the freight network strategy. It recognised the need to ensure that freight networks and systems of infrastructure stay ahead of the freight task through optimisation and efficient movement of freight and reliability of supply chains. While freight has always travelled on shared transport infrastructure, particularly on arterial roads and railways, Victoria has never clearly identified a Principal Freight Network (PFN).<sup>13</sup>

With a PFN for both regional and metropolitan freight now defined, key industrial precincts in Melbourne and Victoria will develop as 'Freight Activity Centres'. FACs will be augmented by land use planning of the precincts with aims to encourage agglomerated logistic activities to help create viable freight volumes and efficiently connect to the principal freight network.<sup>14</sup> This will prevent land

<sup>10</sup> Victorian Government Department of Sustainability and Environment, Melbourne 2030- Planning for sustainable growth, Melbourne, 2003, p72

<sup>11</sup> Victorian Government Department of Sustainability and Environment, Melbourne 2030- Planning for sustainable growth, Melbourne, 2003, p75

<sup>12</sup> Victorian Government Department of Transport, Freight Futures Victorian Freight Network Strategy, 2008

<sup>13</sup> Victorian Government Department of Transport, Freight Futures Victorian Freight Network Strategy, 2008, p25

<sup>14</sup> Victorian Government Department of Transport, Freight Futures Victorian Freight Network Strategy, 2008, p28

'Blue Banana' is a metropolitan axis running from London to Milan and has been Europe's breeding place for innovation and growth. Recently, however, the 'Sunbelt' from Milan to Valencia and the 'Yellow Banana' from Paris to Warsaw have been identified as future European growth poles beside or even beyond the Blue Banana.

(for regional networks in Mumbai refer Golden Triangle / Growth Corridors refer fig.15, fig.16 p22)

Hospers G., Beyond the Blue Banana? Structural Change in Europe's Geo-Economy essay appeared in Intereconomics, March/April 2003, p76 (web link: [www.intereconomics.eu/downloads/getfile.php?id=268](http://www.intereconomics.eu/downloads/getfile.php?id=268)) accessed on November 20, 2011

12: growth areas, networks and CAD overlay

13: regional cities and townships  
image source: Melbourne 2030

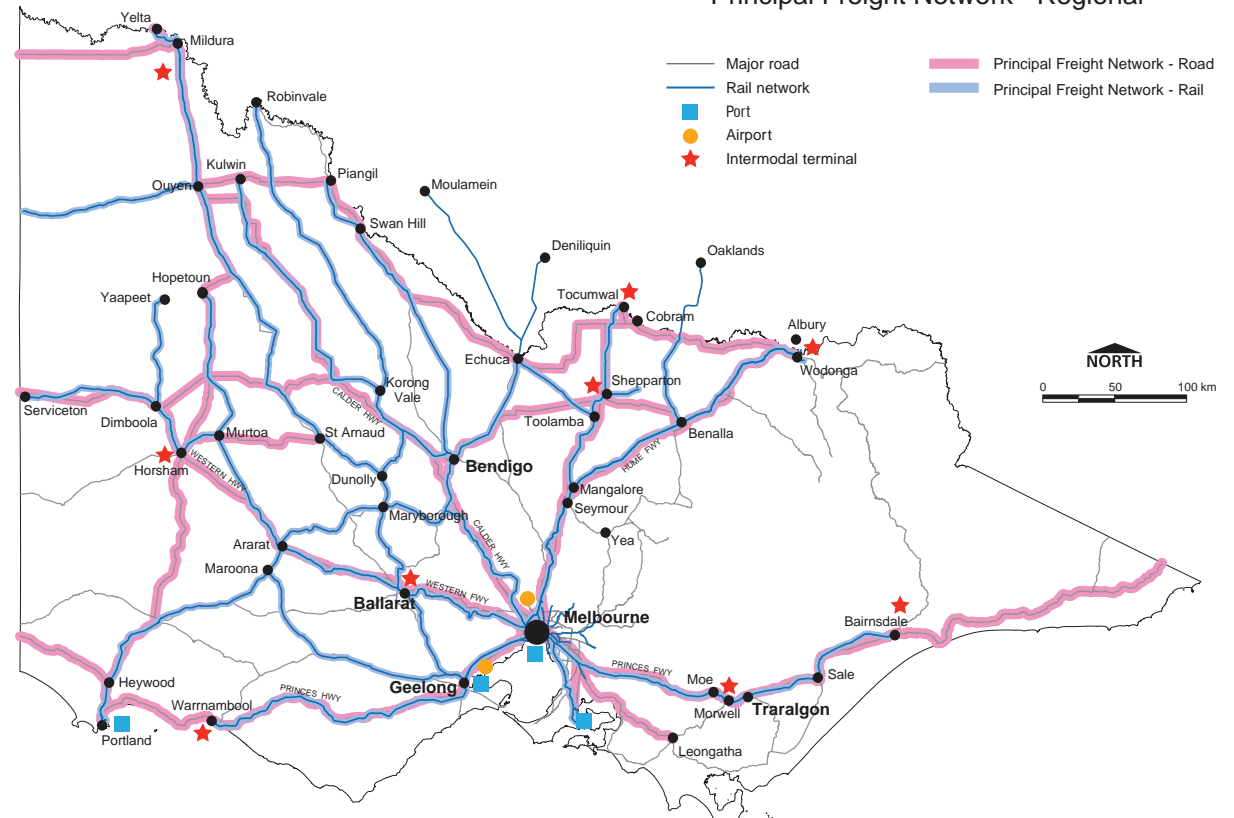
14: blue banana and beyond  
image source: Hospers, 2011

15: principal freight network - regional  
image source: Department of Transport

15

037

### Principal Freight Network - Regional





17

use conflicts and protect and invest in the long term potential of Melbourne's airports, ports and other transport terminals.<sup>15</sup>

While Port of Melbourne has experienced a steady growth in the import and export of containers averaging 7.0% per year,<sup>16</sup> it has fundamentally altered its distribution structure to a more efficient system through the use of suburban intermodal terminals.

Investments will continue in road and rail infrastructure, collectively described as Hybrid Metropolitan Freight Terminal Network or (Hybrid MFTN): A network design based on a combination of rail-road and road-road terminals,<sup>17</sup> with a goal to develop sustainable access corridors.<sup>18</sup>

As metropolitan Melbourne expands in scale and density, industrial production and reproduction centres, infrastructure and supply chains will be collectively hard-wired into the perception of the urban and natural landscape.

The vision plans and policies mark a coordinated drive for consolidated hybrid networks which will accelerate transformations across the city, while simultaneously eliminating and adding on stakeholders. The reshaping of

<sup>15</sup> Victorian Government Department of Transport, Freight Futures Victorian Freight Network Strategy, 2008, p27

<sup>16</sup> Port of Melbourne Corporation, Port of Melbourne and Dynon Rail Terminals 2009 Container Logistics Chain Study, 2010, p46

<sup>17</sup> Victorian Government Department of Transport, Shaping Melbourne's Freight Future Proposals for an intermodal solution to service Melbourne's growing containerised freight task, p2

<sup>18</sup> Victorian Government Department of Transport, Freight Futures Victorian Freight Network Strategy, 2008, p28



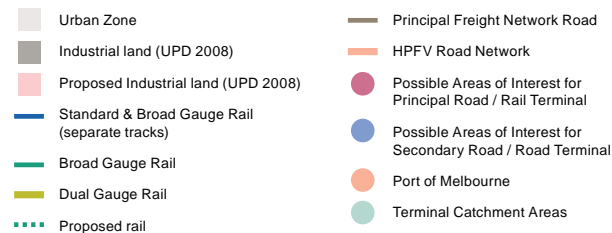
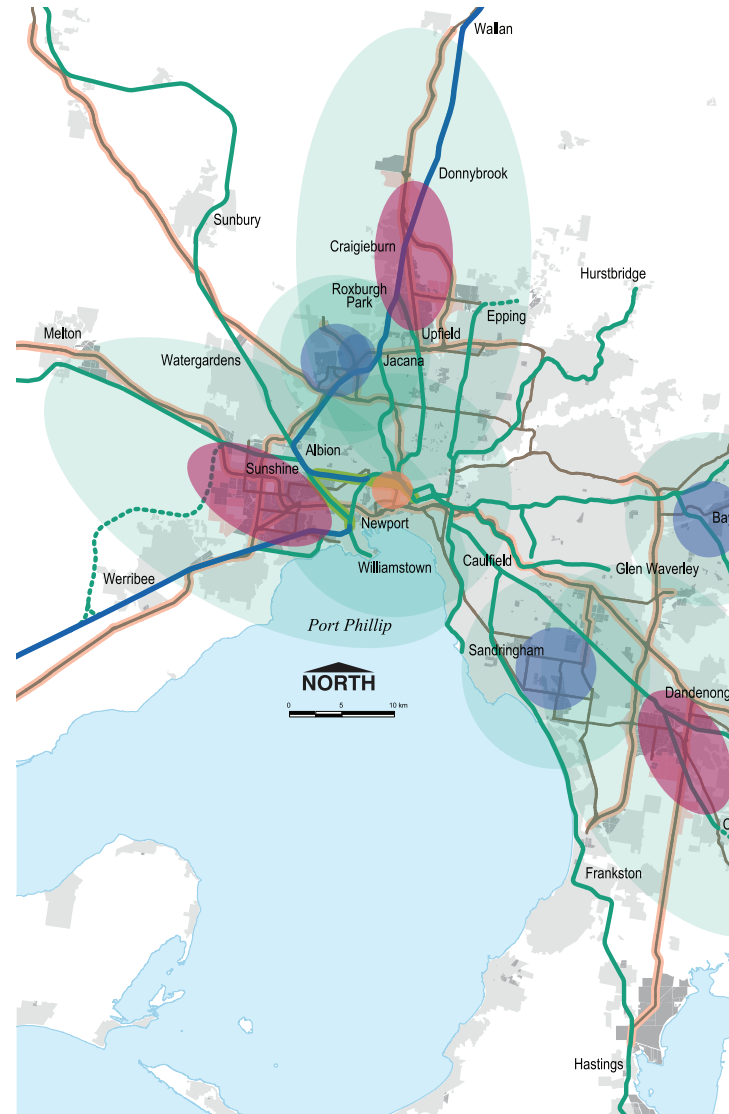
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freight flows from the Port of Melbourne almost synchronously compels the intensification of logistic operations in Melbourne's west accompanied by suboptimal usage of built infrastructure and container depots at Fishermans Bend and Port Melbourne. The connected dots ultimately lead to a State Government proposal for a 200 hectare high density inner city suburb at Fishermans Bend through release of industrial land.

The broader goals of planning strategies work to establish a consultancy through industry, local government and community stakeholders etc. to manage the metropolitan and regional growth. The urgency of these moves will metamorphose, substitute, reorganise and shift to create an urbanism that is by nature indefinite and junctural, with the ability to expand and contract its footprint and intensity.

## Conclusion

CADs connect to, but are not located in areas affected by logistical change and growth corridors. The research focuses on the broader changes in industry as well as the urban shifts influenced by new population centres. Developing a regional approach is essential, especially when redefining these grounds as being between two contrasting forces: densification and growth.



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- 16: principal freight network - metropolitan  
image source: Department of Transport
- 17: current distribution pattern for port  
image source: Department of Transport
- 18: sustainable pattern of metropolitan freight flows  
image source: Department of Transport
- 19: hybrid metropolitan freight terminal network  
of road-road, road-rail  
image source: Department of Transport



# NETWORKS

INDUSTRY / INFRASTRUCTURE / LOGISTICS



01



02



03

042

01: holden engine works, fishermans bend

02: former site of kodak australia, north coburg  
image source: Craig Abraham, the age

03: west gate bridge, west gate park, fishermans bend

'The city appears as a stop-action frame: nothing happens for interminable periods, when suddenly we arrive at built results seemingly by fast-forward, with no clear grasp of how we got there'\_roger sherman, dana cuff,

### Introduction

The Hoddle Grid, apart from delineating Melbourne's CBD, rescales the relationship with the built environment and identifies the city as pedestrian-centric. To navigate beyond the CBD, Melbourne radiates as a metropolis devised to 'decongest'; closely associated with the 'Great Australian Dream' of an isolated house on a block of land. There continues to be a substantial venture in creating space between entities and a more significant investment in overcoming that distance.

The contemporary city can be defined as 'networked ecologies': a series of codependent systems of environmental mitigation, land use-organisation, communication and service delivery.<sup>2</sup> Within this frame, Melbourne is, in its elemental form, a city represented by an infrastructure that continually pines for efficiency within a context of unprecedented growth.

While the research and projects dwell within this inter-reliant network, it focuses on three distinct units; industry, infrastructure and logistics, that are mutually dependent and entwine with the extensive networks of the city and region.

<sup>1</sup> Cuff D., Sherman R., Fast-Forward Urbanism, Rethinking Architecture's Engagement with the City, Princeton Architectural Press, 2011 p10

<sup>2</sup> Varnelis K., Introduction: Networked Ecologies (appears in) Varnelis K., The Infrastructural City: Networked Ecologies in Los Angeles, Actar, 2008 p15

### Landscapes of Information

Claude Shannon a mathematician and electrical engineer at Bell Labs, founded 'Information Theory' (1948), which marked the origin of the word 'bit' as 'a unit for measuring information.'\*\* More importantly, Shannon viewed 'information' entirely as an engineering problem, and hence the word information in this theory, must not be confused with its ordinary usage; in particular, information is not be confused with meaning' and he went on to declare that 'the semantic aspects of communication are irrelevant to the engineering aspects'\_Claude Shannon, Warren Weaver, Mathematical Theory

This understanding is vital in framing a more conclusive approach to isolate and elaborate the methodological aspects that embody the network of industry, infrastructure and logistics; i.e. to view them as organisational diagrams. There are a series of changes and to begin to address them requires plunging into the forces that determine their operation, beyond the immediate context of the city. The disassociation of significance and meaning as a first step, becomes a springboard to unravel the contemporary urban frictions and potentials at an organisational level. This informs aspects of the project when they are thrown back into the combination of activities and propositions. The second cycle of research addresses these collisions and networks.

\*\* Gleick J., The Information: A History, a Theory, a Flood, Pantheon, 2011, p4



04

As opposed to the CAD model, the research engages with a model of the city specified by networks of infrastructure, industry and logistics.

### Industry

Industry broadly refers to sites of production, processing, service provision, storage and distribution within an economy, at various stages of their respective lifecycles. Industry is dependent on global and local demand for the services, products and innovation as well as economic and political dynamics that continuously measure its relevance. The scale and extent of industrial enterprise constantly fluctuates, and its terminal end is de-industrialisation, or the displacement of industrial activity (most notably manufacturing and processing) further away from the city. This leads to post-industrialisation, wherein the economy transfers its intensity from manufacturing to one of service providers. Industry is a system in flux.

### Infrastructure

Infrastructure can be seen as the connective tissue that binds and distributes program and services. It's structure, physical form and identity is varied. Infrastructure refers to road-networks, metropolitan and regional rail, the operations of the seaport and airport, intermodal terminals, transport hubs as well as the easements and built environment influenced by their connection. Infrastructure also include public works services like waterworks, sewage facilities, waste disposal systems and landfills, electrical transmission towers and associated power stations, pipelines, mobile phone towers etc. The information age widened the scope of the term, with an international grid of sub-marine fibre optic cables for communication and information



05

systems. While the infrastructure of an industrial society is clearly embedded in our understanding of the urban landscape, information age networks or 'convergence of un-mappable hyperspace'<sup>3</sup> is no less relevant in defining the urban field.

'The space of global technological flows does not desire to become visual or apparent: perhaps only some spray-paint or a flag in the ground marks the presence of fibre below, and sometimes even that is elusive' \_kazys varnelis<sup>4</sup>

### Logistics

Logistics is an integrated system that manages the flow and distribution of goods and follows industrial cycles from points of extraction to processing and manufacturing, storage, distribution and even disposal. It operates within infrastructural conduits or corridors and is planned to provide the most efficient sequence of delivery, considering speed, time, economic viability, supply and demand. Ideally, these processes are performed 'out-of sight' where goods produced in one place seamlessly arrive at retail outlets. As cities expand hastily, the pressures on these systems increase forcing an intensification of operations that is developing a scenario within which infrastructure corridors and industry can no longer isolated from the rest of the city. They constitute more of the city, and at the same time residential areas and commercial activities expand in physical presence, growing in the gaps. These

<sup>3</sup> Varnelis K., Invisible City: Telecommunication (essay appears in) Varnelis K., The Infrastructural City: Networked Ecologies in Los Angeles, Actar, 2008 p122

<sup>4</sup> Varnelis K., Invisible City: Telecommunication (essay appears in) Varnelis K., The Infrastructural City: Networked Ecologies in Los Angeles, Actar, 2008 p128-129



06

043

04: landscape with burried telecommunication line  
image source: Alan Wiig

05: container terminal, fishermans bend

06: linfox, supply chain solution provider

07: retail fronts - myer, bourke street  
image source: the fifth estate

08: architectural back - kmart distribution centre, truganina  
image source: goodman australia

concealed operations are now re-oriented and exhibited, and are increasingly being integrated by physical proximity with public and private domains. William Mitchell observed that there exists in addition to all manner of “retail fronts” a corresponding “architectural back” consisting of supply chain infrastructure that allows goods to arrive on demand at specific, physical locations around the world.<sup>5</sup> (refer fig.7, fig.8 p44)

### Staging Grounds

Logistics, distribution networks and infrastructure operate collectively as ‘supply chain management’ which in its entirety includes the planning, execution and monitoring of an entire supply chain. The ‘just -in-time model’ of delivery works towards reducing the overheads on inventory and transport costs.

However the efficiency of this system is closely linked with oil prices and carrying costs, and many industries favour sea-shipments of products to maximise profits. This guarantees that there will be a fresh demand for bulkier infrastructure.

Deborah Richmond notes that supply chains almost have no end, even the household is a small scale intermodal hub where goods are delivered on an almost daily basis by small trucks, SUVs and automobiles to reside until they become obsolete or undesirable, at which point they are stored indefinitely in

<sup>5</sup> Mitchell W., Transarchitectures Symposium, lecture Getty Center, Los Angeles, June 6 1998, quoted in Richmond D., Consensus Gone Wild: Communication (essay appears in) Varnelis K., The Infrastructural City: Networked Ecologies in Los Angeles, Actar, 2008 p214

public storage units, returned into a flow of recycled or second hand goods distribution, or even more likely, shipped off to the growing, toxic mountains of the city’s landfills.<sup>6</sup>

Situating infrastructure back into the city, would mean rethinking its relation to the city. Infrastructure projects are no longer defined by a vision or growth pattern but a means to compensate for or bridge the divide between existing provisions and metropolitan growth and densification. The city’s ability for continued growth is weighed down by the time frame and cumulative nature of these projects that are eternally incomplete, piecemeal, provisional and even propositional.

The ominous density regime will integrate the large contiguous systems and infrastructures. The city (as a population) will not only encounter but actively confront industrial cycles of production, as well as consumption through a reorganisation of intra-urban form, bordering or overlooking landfill sites.

Many neighbourhoods in Melbourne already share a fence with industrial sites as easements of industrial and infrastructural corridors deplete. (fig.9, p45)

Ultimately, the nature of activity would classify these large scale sites as mono-functional landscapes, which is a scenario the projects consciously resist. The concepts and ideas relating to singular-program landscapes and the tactics for cross-programming are identified more specifically in the following projects.

<sup>6</sup> Richmond D., Consensus Gone Wild: Communication (essay appears in) Varnelis K., The Infrastructural City: Networked Ecologies in Los Angeles, Actar, 2008 p216





09

Density and population increase forces logistics, infrastructure, residential development and landscape ecologies together. The city develops as 'staging grounds' and scenarios for these different occupations to grow and be nurtured.

### Summary

This architecture of exchange is more than an urban dialectic, as humans compete with their possessions for an open space or roads<sup>7</sup>. It is a hidden system that is sequentially becoming more conspicuous in a contested space. At the current rate of growth and pace of development cycles there is an urgency for a language to communicate the clustering of forces that can be anticipated, but not controlled.



10

09: sharing a fence, princes highway, brooklyn, victoria

10: current distribution pattern for port  
image source: nearmap

045

<sup>7</sup> Richmond D., Consensus Gone Wild: Communication (essay appears in) Varnelis K., The Infrastructural City:

11: sir patrick abercrombie's county of london plan, 1943  
image source: the bartlett

**Mono-functional Landscapes**

Sir Patrick Abercrombie's 'County of London Plan' (1943) derives its principles from a mono-functional agenda, with the removal of business activity to special business sites on the edges and transport routes running between residential and business areas.<sup>1</sup>

'Until the 1960s, the principle of separation of functions was one of the ideals of the modern urban planner, and while the small scale urban renewal of the 1970s and '80s arose partly as a critique of this, it stubbornly remained urban planning practice'.<sup>2</sup>

The mixing of functions and functionality is now gaining acceptance as a model for a 'vital city'.<sup>3</sup> It has both intrinsic significance as well as an ability to create services and initiate relations and associations of its own, especially with small-scale business and light industrial activity that operate under regulated conditions of sound and pollution.

1 Hajer M., Reijndorp A., In Search of New Public Domain: Analysis and Strategy, NAI Publishers, 2002, p92

2 Hajer M., Reijndorp A., In Search of New Public Domain: Analysis and Strategy, NAI Publishers, 2002, p92

3 Hajer M., Reijndorp A., In Search of New Public Domain: Analysis and Strategy, NAI Publishers, 2002, p92

# Master Planning and Scenario Strategies

‘Together, all attempts to make a new beginning have only discredited the idea of a new beginning’ \_rem koolhaas<sub>8</sub>

## Zoning

Having progressed beyond the ‘incurable utopianism’<sub>9</sub> of modernism, it is becoming increasingly clear that the tools employed by urban planning are obsolete or inefficient within the contexts of rapid urban growth and shrinking cities, environmental concerns, economic challenges of uncertain futures, and fundamental doubts about market-led approaches.<sub>10</sub> These conditions have collectively engendered an ‘uncertainty of urban activities’ especially when relating to specialised areas, fringe conditions and peri-urbanisation.

Urban planning matured from conscious interventions in the nature and form of urban areas to achieve a particular social, political or environmental objective. The rapid growth of Western Europe in the 19th century nurtured a modern edition of urban planning that aims to portray the ideal vision of the future through the land-use zoning scheme.<sub>11</sub>

<sup>8</sup> Koolhaas R., Mau B., Werleemann H., S, M, L, XL, Monacelli Press, 1995, p961

<sup>9</sup> Koolhaas R., Mau B., Werleemann H., S, M, L, XL, Monacelli Press, 1995, p967

<sup>10</sup> United Nations Human Settlements Programme (UN-Habitat), Planning Sustainable Communities : Global Report on Human Settlements, 2009, (vi)

<sup>11</sup> United Nations Human Settlements Programme (UN-Habitat), Planning Sustainable Communities : Global Report on Human Settlements, 2009, p10

The zoning scheme was a method that eventually become the definitive solution, the ‘rabbit out of a hat’ for all urban concerns. It bestowed order in describing chaotic systems, through definite and precise allocation of spatial resources for programs. It negotiated highly complex practices of the growing city and prescribed the limits on its development. The overarching principle employed, was that urban planning ‘included’ through ‘exclusion’ which is to say, it expressed what was possible by prohibiting or eliminating every other possibility. However, it’s relationship with the city is unstable, characterised by periods when planning has been able to solve many problems of urban areas, while at other times it has been viewed as unnecessary and unwanted government interference in market forces.<sub>12</sub>

## Nomadic Zones / shifts in networks causing sporadic, ‘mono-zonal activity’

The ‘unbundling’ of infrastructure development in the late 1970s – through forms of corporatisation or privatization of urban infrastructure development and provision, and developer-driven urban development has tended to drive patterns of urban fragmentation and spatial inequality.<sub>13</sub> An increase in the number of such infrastructure projects as well as mega-projects in urban areas has irreversibly transformed the urban field. Changes in the spatial organisations, ability to provide infrastructure (roadways, railways, transmission lines, water etc.) more rapidly has altered the growth pattern of cities. The pace and sheer scale of such development is akin to nomadic

<sup>12</sup> United Nations Human Settlements Programme (UN-Habitat), Planning Sustainable Communities : Global Report on Human Settlements, 2009, p3

<sup>13</sup> United Nations Human Settlements Programme (UN-Habitat), Planning Sustainable Communities : Global Report on Human Settlements, 2009, (xxvi)

Head Start Early Childhood Center, reused Kmart building, Hastings, Nebraska

12: head start early childhood centre, corn fields  
image source: big box reuse

13: cargo bay playground, interactions with cornfield  
image source: big box reuse

14: playground, former cargo dock  
image source: big box reuse

The Calvary Chapel, reused Wal-Mart building, Pinellas Park, Florida

15: signage for the grocery store-turned-chapel  
image source: big box reuse

16: parking lot, the calvary chapel  
image source: big box reuse

17: parking lot during service time, the calvary chapel  
image source: big box reuse

exploration of resources, but with permanent footprints. The urban form that arises from this nature of development is not so much a steady swell in densities, but concentrated points of activity, cross programming and trade, followed by vast expanses of infrastructure connections. These nodal points in the field, offer a central city-like experience. But the contemporary metropolis is composed equally, of intrinsic structure or cycles: production and manufacturing, storage, distribution, consumption and disposal. These cycles are individually intricate but collectively chaotic. The city is involuntarily becoming a ‘container landscape’ of super-scale structures. Decades of overinvestment of resources in storage contexts and large scale retail activity, conform to a typology of the ‘big box’ or large, freestanding warehouse-like buildings.<sup>14</sup> When big boxes, up-size to a ‘supercentre’<sup>15</sup> they leave behind a not just building shell, but post-industrial waste land. Ironically, in many cases it has been noted that moving up the road to a completely new structure is more economical or cost-effective than upgrading an existing structure. This almost ensures that the building stock has to be replaced more frequently with changing standards and demands.

Reprogramming industrial buildings for non-industrial use, introduces a more complex relationship of shifts. The shifts from production and distribution to educational, health care, recreational even spiritual, highlight the resilience of the urban environment through resisting obsolescence and waste. (refer fig.12-20 p48-49)

14 Christensen J., Big Box Reuse, The MIT Press, 2008, p1

15 Christensen J., Big Box Reuse, The MIT Press, 2008

Planning departments are now imposing physical boundaries on growth areas to better manage the urban sprawl. Densities between consecutive areas of concentrated activity will start to change very rapidly. Land pressures and housing demands will either force industrial activity further out to a point where transportation and distribution cost increase exponentially and zoning buffers between industrial and residential zones will become imaginary.

Opportunity

At this intermediary point in time, large areas will be caught in an industrial / post-industrial stage between economic cycles. There will be the responsibility of bridging the annual housing shortfall, upgrading skills of the workforce and provision of employment and economic opportunity in new sectors of industry, while dealing with toxicity, remediation and sensitive ecologies of previously used sites. But ultimately the feasibility will defined by examining networks of access, investigating logistical efficiency dictated by economies of scale, and the ability of development to respond to scalability and temporality.

Clustering / Concentration of Connections

Such an urbanism of intensity and exchange will demand not urban planning but more precise approaches of strategic spatial planning, which does not tackle every part of the city but focuses on only those aspects and areas that are strategic and important to the overall planned objectives.<sup>16</sup> Large scale operation will be shaped by uncertainty of time and spatial footprint. These zones sit outside the formal notions of urban planning and require a reformed

16 United Nations Human Settlements Programme (UN-Habitat), Planning Sustainable Communities : Global Report on Human Settlements, 2009, (xxiv)

scheme and understanding that facilitates indefinite program. Strategies will promote and nurture local operations and the virtual and physical connection they create through clustering of related activities. 'Irrigation of territories with potential'<sup>17</sup> will create a scenario that locates industry within current and future cycles of production and distribution maximising potential of existing systems of connection and delivery and conversant with proposed alterations to the city's infrastructure networks.

The persistent evolution of ideas will be through continually testing and juxtaposing both permanent and impermanent programs with existing building stock or new built infrastructure woven into existing economies. Success and failure of scale, function and intensity are relayed through self critique or 'trip switches' that safeguard the process.

The projects detailed as part of this thesis investigate through an understanding, that limits and boundaries both spatial and functional can be accepted only through immersive understanding of the position of the local in metropolitan, regional or global networks. The strategy is not about lines, but conclusively connecting dots. Every spatial experiment and design intervention is a critical layer of information transmitted back, that updates the understanding of both intensity and exchange.

The St. Bernard Health Center, parking lot of closed Wal-Mart building, Chalmette, Louisiana

18: road sign to st. bernard health center  
image source: big box reuse

19: signage directing traffic through wal-mart parking lot  
image source: big box reuse

20: health center tent, and signage  
image source: big box reuse

<sup>17</sup> Koolhaas R., Mau B., Werleemann H., S, M, L, XL, Monacelli Press, 1995, p969



# SPATIAL EXPERIMENTS

EASTLINK: EMERGING CONDITIONS OF INFRASTRUCTURALI – INDUSTRIAL OPPORTUNISM /  
FISHERMANS BEND: (UN) DESIRABLE - RECOVERING DROSS

## EASTLINK// **emerging conditions of infrastructural – industrial opportunism**





**FOR SALE**  
**SITE SET FOR SUCCESS**

- Commercial development site
- Zoned Business 5 (suit offices)
- Concept plan to build 2,355sqm over 4 levels (srca)
- Land area: 3,128sqm...

John Guastella 0414 900 480  
9791 4800  
cameron  
9775 1535

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'The spatial task is no longer to embed the road in the landscape, but to design a mobility landscape, in which infrastructure, urban development and landscape are combined'\_paul meurs

**Industries / Infrastructure / Urbanism**

Infrastructure networks are prominent organising lines in the landscape, a rapidly evolving network that suggests and stimulates development and the creation of new uses. The velocity as well as locations at which access is provided by new infrastructure, regulates the speed and ability to compress distance and hence these networks define areas of opportunity. Infrastructure becomes the primary tool for managing growth and consolidation, inducing a new spatial dynamic. Industries and infrastructure exhibit a symbiosis, though not always coherent. The project seeks a greater understanding of these adjacencies and frictions, centring on the recently completed Eastlink as a reference point for spatial schemes. The research frames industrial and infrastructural shifts as a basis for tracing urban systems, beyond the functional link between infrastructure and industrial production and distribution.

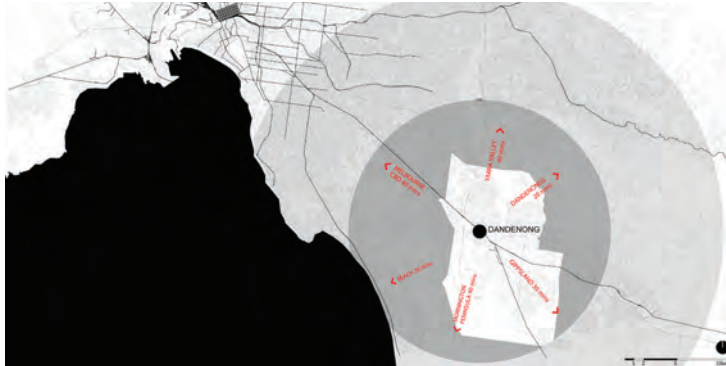
**CAD / the 'polycentric city'**

Melbourne 2030 and its subsequent revision Melbourne @ 5 million set in motion a planning paradigm that perceived the city beyond the generic Central Business District (CBD) bounded by inner-urban areas followed by suburban areas of sprawl that extend to the urban growth boundaries.

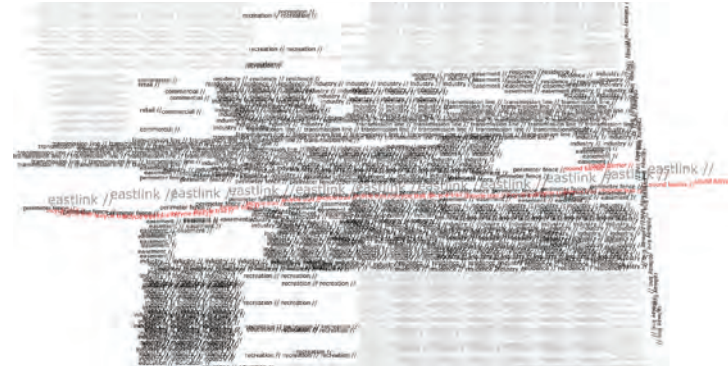
It instituted a 'polycentric city' or a city with multiple cores of Central Activities Districts (CAD) with a greater density and concentration of activity, with provision of employment centres, cultural, residential and commercial enterprise, delivered through new and re-appropriated rail and road as well as public transport systems. The notion of a 'city within a city' creates a new network of connections and arrangements, which in context of Dandenong and the Eastlink, reveals a series of differences and imbalances that manifest themselves in a diversity of developments and shifts.

Master-planned community offerings like Metro Village 3175, and conversions of light-industrial warehouses to accommodate direct-to-public retail franchises, have initiated a cycle of transformation at Dandenong.





03



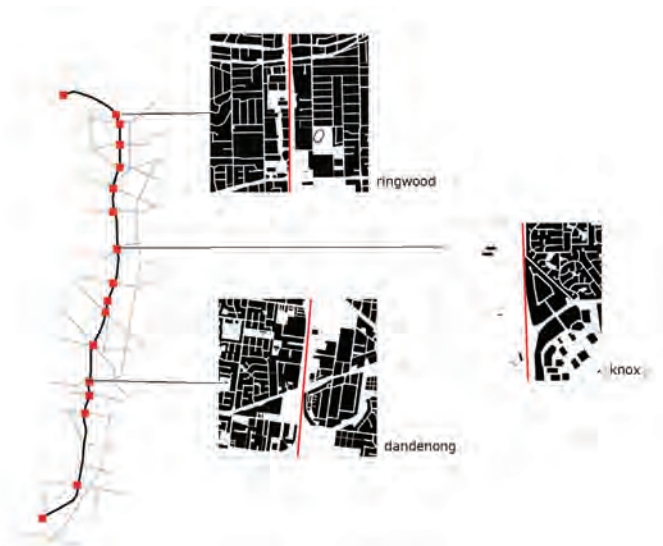
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06

055

## Eastlink

The Eastlink is a planar juxtaposition in the landscape, an expressway connecting the eastern and south-eastern suburbs of Melbourne that adds new variables for distribution, urban development and creates new forms of access, and potential through the areas it bisects. These transformations highlight the challenges and more importantly, the opportunities for small scale industrial areas and industrial precincts within the context of the contemporary metropolis. Comprehensive planning and green-field developments with varying uses and scale in areas surrounding industrial belts establish new parameters, restrictions and prospects that these industrial areas can offer to the immediate local and metropolitan perspective.



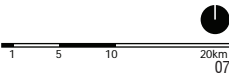
04

03: dandenong within the context of metropolitan melbourne

04: eastlink bisecting the landscape at ringwood, knox and dandenong

05: typographic representation, spatial and temporal boundaries, ringwood

06: eastlink at dandenong (2006) while under construction highlights the juxtaposition of infrastructure over established industrial nodes and residential areas  
image source: Linking Melbourne Authority





08

### Project Description

The industrial area is located between the projected high-growth CAD in Dandenong and the Eastlink interchange point. The Eastlink creates a new gateway re-orienting dormant industrial practices against the existing grain of development, and towards a primary road and new housing developments like Metro Village 3175.

The nature of transformations in this area of Dandenong, construct a viable condition for industrial practices to relocate, while the newer retail centres that occupy former industrial buildings have a diverse space utilisation. The changing dynamics of industries (technological and spatial requirements), are compounded by the shifting forms of usage. The expansion of retail and commercial entities within an industrial fabric are characterised by the inefficient usage cycles of the built environment and it's surrounds. Ambiguous voids, buffers and easements are implicit to regular configurations of industrial zones, which fall into a condition of dross or waste land under new usage cycles.



09

10



07: linkages and connections of high-speed road infrastructure (tollways, freeways etc.) with industrial sites recoding change of ownership / function

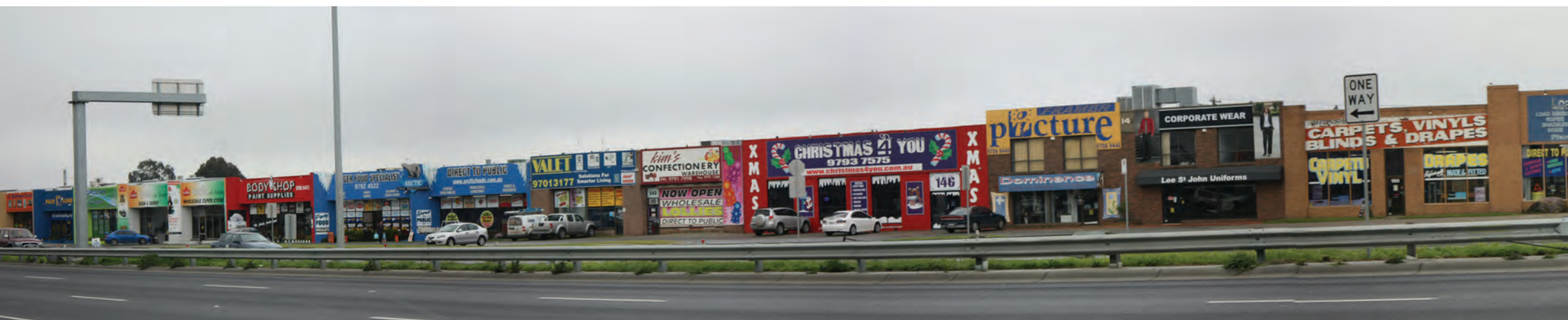
08: CAD development, lonsdale street, dandenong

09: metro village 3175, dandenong

10: developments of dandenong CAD (yellow), boulevards (red streets) dandenong plaza (dark grey) and industrial areas (grey) and metro village (red)

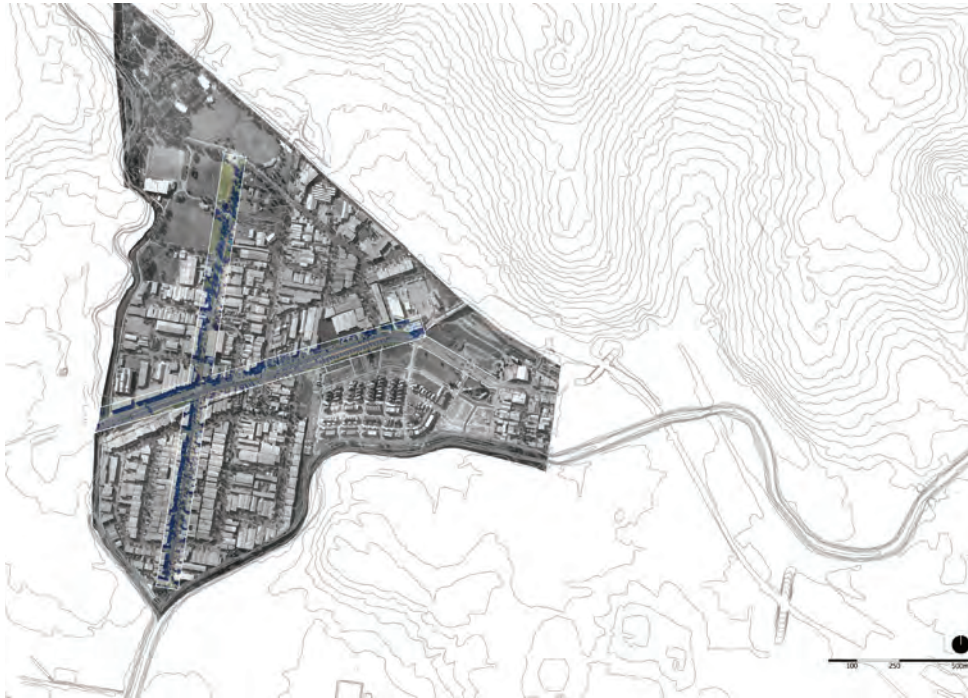
057







11: the strip, cheltenham road, dandenong, a street with dense front-end activity / direct to consumer retail located within a dormant industrial belt



12: site area under consideration



13: industrial area, dandenong





14: industrial building grain in industrial area



15: interstitial voids and streets, that form areas of opportunity, a 15min walk from dandenong station







17

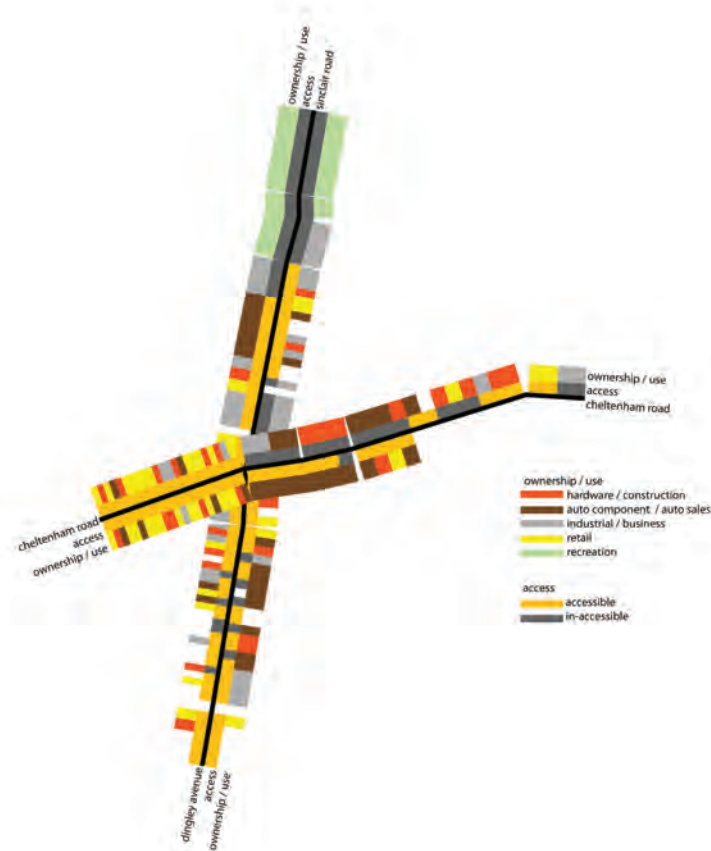
The project highlighted a series of unused industrial blocks, loading bays and streets to overlay a series of design interventions. Within the current scenario of the relocation of industrial activity, the areas selected are available for a new program, ranging from amenity and cultural areas to recreational spaces. The adding of new activities in this landscape creates a fresh context, that is transient in nature. The insertion of functions and the reconfiguring of residual space prompted a series of tests through reoccupation, adaptive reuse, reinstitution, conversion and erasure that made active and passive attempts to create permeability in the built environment. Hosting dynamic social and public activities in this environment further increases the urban porosity and maximises usage potential.

16: photographic documentation of urban landscape at dandenong: CAD, industrial sites, dandenong creek and eastlink trail



18

19



20



17: projected population growth in greater dandenong, and surrounding suburbs  
data source: Australian Bureau of Statistics

18 projected increase in population, new families and new employment opportunities  
data source: Australian Bureau of Statistics

19: documentation of ownership structures and access across cheltenham road and the intersecting dingley avenue

20: overlay of networks, industrial buildings and implicit voids





21



22



23

## Spontaneous Paths

21: centre place, melbourne

22: block arcade, melbourne

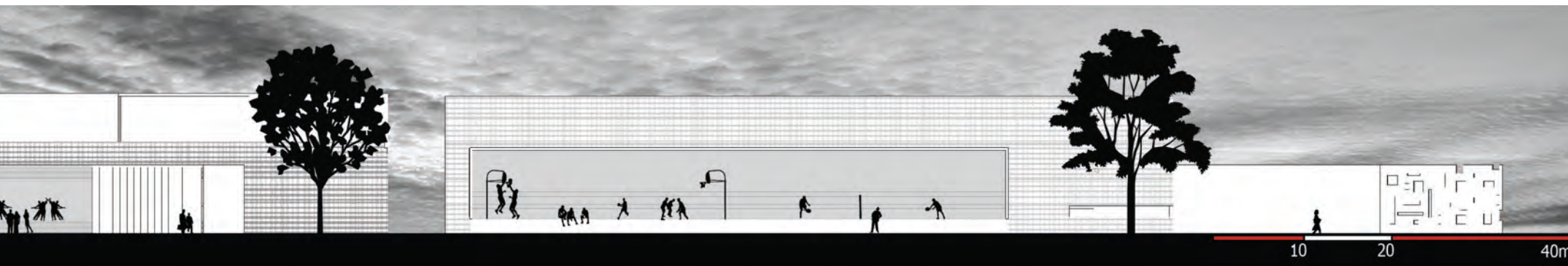
23: walkway between rmit building 8, 28 and 6, melbourne



24: spontaneous paths of access: existing pedestrian density, dandenong CAD and industrial area



25: spontaneous paths of access: proposed pedestrian in industrial area based on relative density in dandenong CAD



26

The proposed areas of concentrated activity, which by location are a disjointed series of interventions, are connected through streets of access and pedestrian networks. An analysis of spontaneous paths of access identified conditions in Dandenong CAD and proposed design strategies that increase pedestrian activity in the industrial areas. (refer fig.24, fig.25 p64) Hybrid streets developed by utilising warehouses to form walkways at ground level connecting with the secondary network. These networks created a porosity by which it was possible to navigate through the industrial area through a hierarchy of connecting spaces. Proposals for adjacent retail and recreational use broaden and concentrate activity.

### Summary

Dandenong was an isolated archetype representing the coalescence of new infrastructure and shifting industry, with the potential for rapid urban growth. The development of Dandenong as a CAD, involves reforming its policies towards a transit oriented development. The strategy created new streams of influx through retail and employment opportunities into the council, boosting commercial activity and residential demand. However, its industrial zone on the fringes has no planning policy or mechanism to evolve into a precinct that reflects the aspirations of adjacent areas. The strategies investigated the latent opportunity for spatial development of interstitial spaces in the industrial area, located between the Eastlink and Dandenong CAD. The transitional landscape bridges the new unconventional mixed-use development (commercial, residential etc.) with the CAD and it's surrounding post-industrial precincts.

27



26: section through plaza that connects a community hall and sports and recreation centre (refer plan, fig. 33)

27: insertion of tertiary networks through tools of erasure, conversion and addition adding new forms of access and amenity

065





28

066



29: aerial view of industrial area and metro village 3175



30: primary road network, cheltenham road and dingley avenue



28: section through public space anchored by art pods and work units, exhibition spaces and eastlink trail and cycle track (refer plan, fig. 37)

067



31: primary road network along with secondary street and pedestrian routes connected through existing and proposed structures, eastlink trail

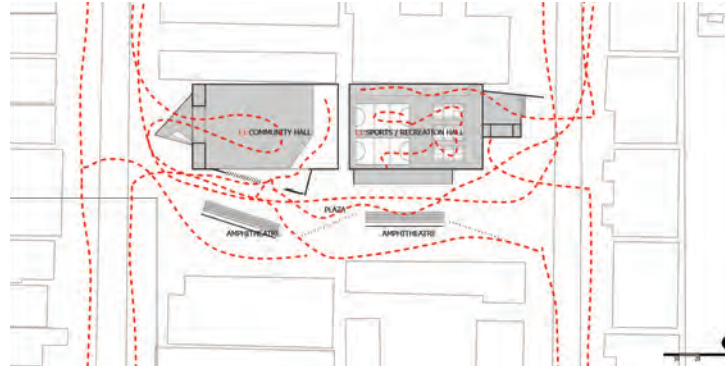


32: locations of design interventions along pedestrian street network

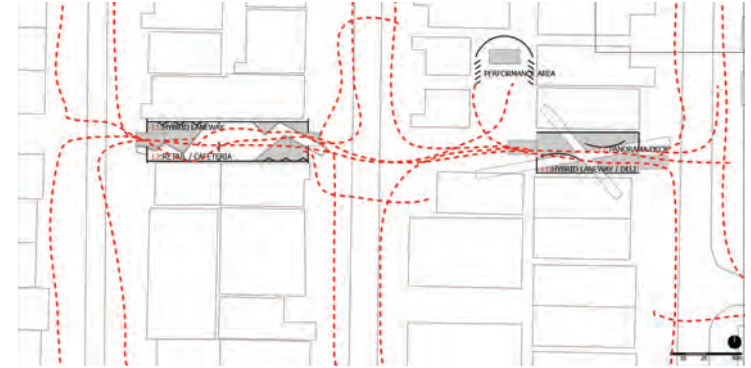


33: plan: community centre, sports and recreation centre, plaza and pedestrian flows

34: plan: pedestrian street developed through interventions and addition of amenity, cafe, performance spaces and pedestrian flows



33



34

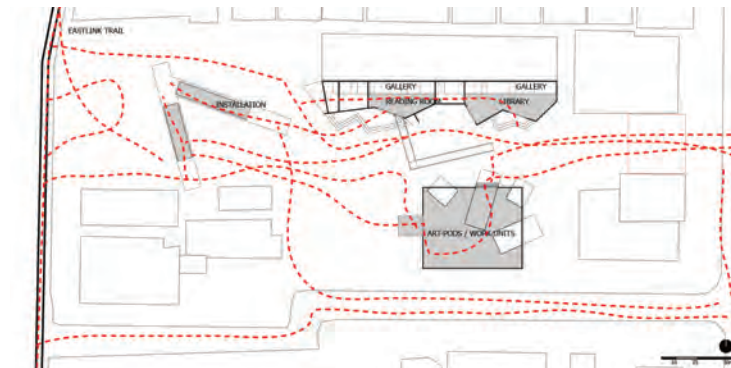


35: the community hall that grows out of post-industrial occupancy and connected to a sports and recreation centre by a plaza, sets up a condition of the street or pedestrians becoming spectators of indoor sports activities and community performances



36: specific structures of the existing building stock are utilised to extend connections between pedestrian walkways, adding porosity of pedestrian movement through the industrial area.





37

37: plan: cultural precinct through reprogramming warehouses and adding function to include art pods, work units, exhibition spaces, library and reading rooms, public space and connections to cycle trail



38: art pods and work units are developed within existing industrial warehouses and combine with street networks and exhibition spaces



39: the eastlink trail, which is a cycle path and walkway along the dandenong creek, runs parallel to the industrial sites, recreational spaces develop an edge that induces a relationship with trails, paths and pedestrian streets to deliver a density of contact.

070

FISHERMANS BEND// **(un) desirable: recovering dross**









01

072

01: fishermans bend, view from melbourne cbd

33: median house prices, (in millions)  
data source: domain

'A universe of empty signs is a place of total disorder, a surplus of formalities that seem to speak of nothing but the form' \_manfredo tafari

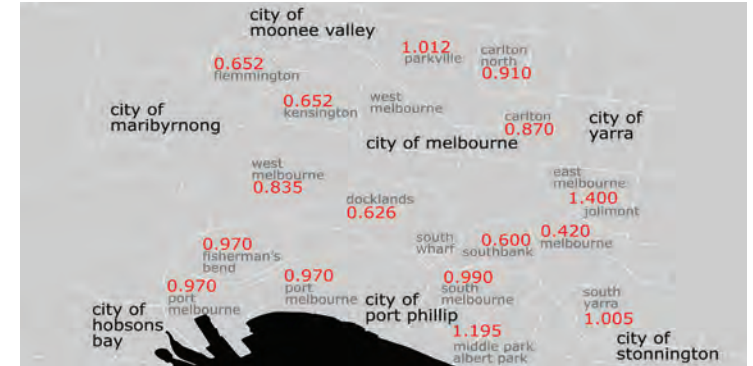
### Backdrop

In February 2011, the Ted Baillieu government announced the release of 200 hectares of industrial land for inner-city housing at Fishermans Bend.<sup>1</sup> The vision plan looks at the creation of an Urban Renewal Authority that will preside over the 20-30 year development that will introduce 10,000 to 15,000 new dwellings replacing light industrial and vacant lots with a typology of low rise, high density projects. Adjacent to the Docklands, this development will signal the creation of an inner-city growth corridor,<sup>2</sup> contrary to current planning policies that focus primarily on peri-urban areas.

While details are imprecise, and the exact parcels of land that will be made available are not yet specified, the government's proposal is envisaged as affordable housing and addresses the State of Victoria's annual housing shortfall of 6000 units.

<sup>1</sup> Johanson S., Baillieu plans inner-city housing revolution, The Age, February 18, 2011 (web link: <http://news.domain.com.au/domain/real-estate-news/baillieu-plans-innecity-housing-revolution-20110217-1ay6t.html>) accessed on February 22, 2011

<sup>2</sup> Johanson S., Baillieu plans inner-city housing revolution, The Age, February 18, 2011 (web link: <http://news.domain.com.au/domain/real-estate-news/baillieu-plans-innecity-housing-revolution-20110217-1ay6t.html>) accessed on February 22, 2011



02

### Shifting Port Practices / Dross Land

The Port of Melbourne has been systematically shifting to a more efficient and sustainable model of distribution, establishing intermodal freight terminals in the outer suburban areas such as Dandenong, Sunshine and Wallan, thus re-organising existing logistic densities and networks. This shuffle has resulted in the underutilisation of built infrastructure (storage warehouses, container depots, industrial services etc.) at Fishermans Bend and surrounding areas of Port Melbourne.

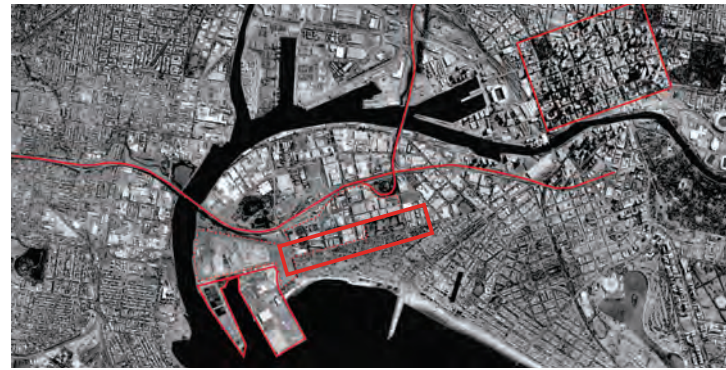
The spatial image of a city is specified by its infrastructural elements and communicated beyond their capacity to sustain constituent and intrinsic objectives. The transfers of organisational structures, along with the urban cores vacated in favour of distributed locations, have collectively given rise to dross land, which broadly refers to areas within urban regions that remain after redundant industrial and economic processes supersede their original use.<sup>3</sup> They represent an urban form that is (today) a representation of surplus and excesses, that is nevertheless embedded in the collective memory and imagination of the city.

The project at Fishermans Bend is placed within the context of Fishermans Bend's future urban plan, and located in an industrial precinct, assigned for an inner-urban high density residential development. The research draws on latent relationships in the industrial neighbourhood to develop spatial associations, focussing on a protean model that is transient and variable. This model addresses the existing port infrastructure and areas of employment and the

<sup>3</sup> Berger A., Drosscape: Wasting Land in Urban America, Princeton Architectural Press, 2007, p1



03

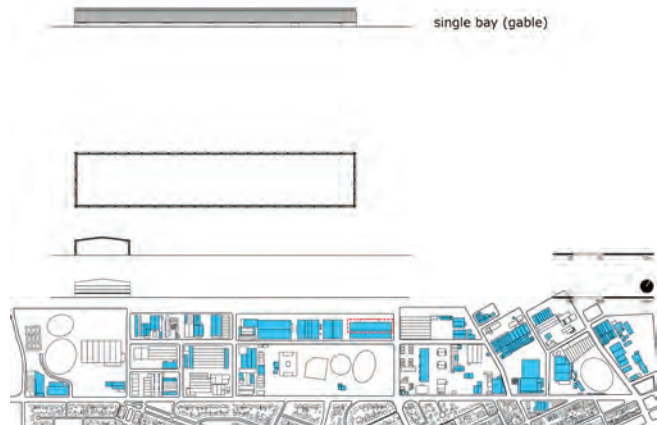


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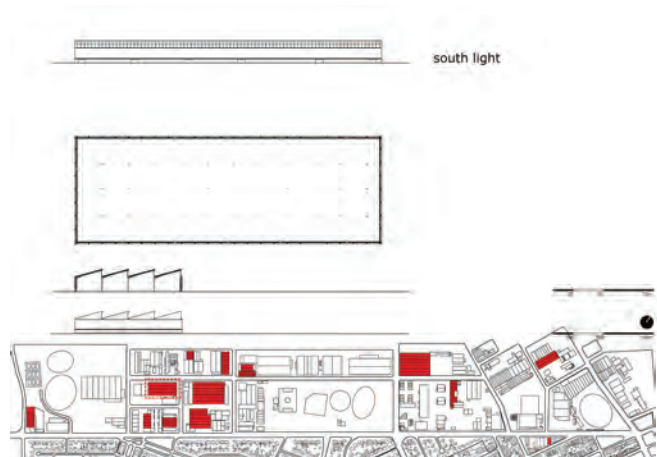


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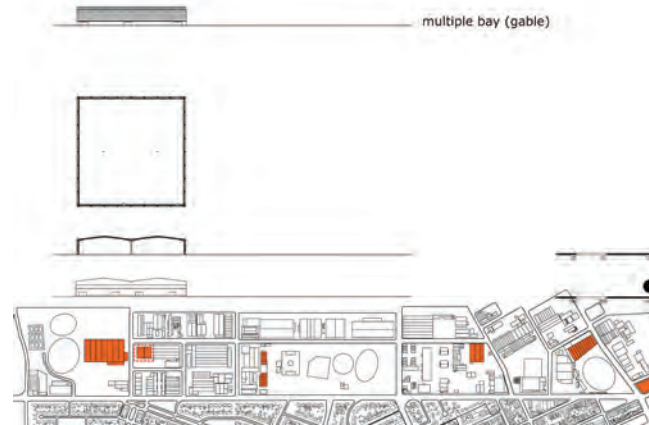
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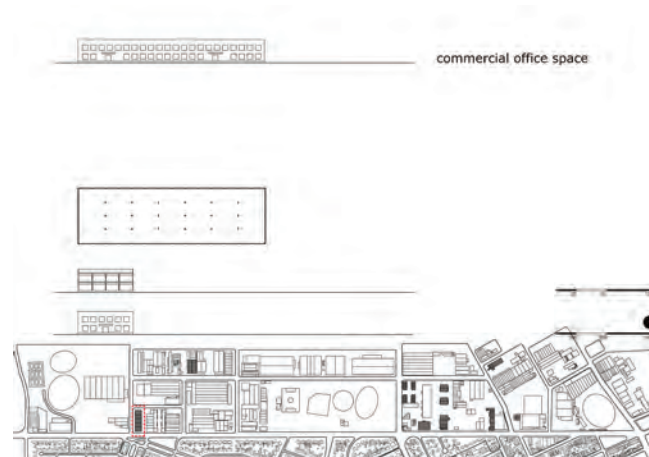
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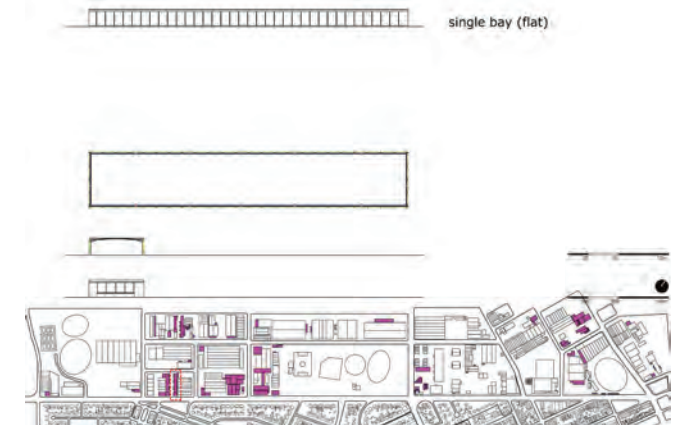
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10



08



073

- 03: shifting port practices  
data source: Department of Transport
- 04: bisected by large scale infrastructure, fishermans bend  
image source: nearmap
- 05: overlay of planning zones  
data source: Department of Planning and Community Development
- 06: design documentation plate: single bay (gable)
- 07: design documentation plate: multiple bay (gable)
- 08: design documentation plate: single bay (flat)
- 09: design documentation plate: south light
- 10: design documentation plate: business park / commercial office space

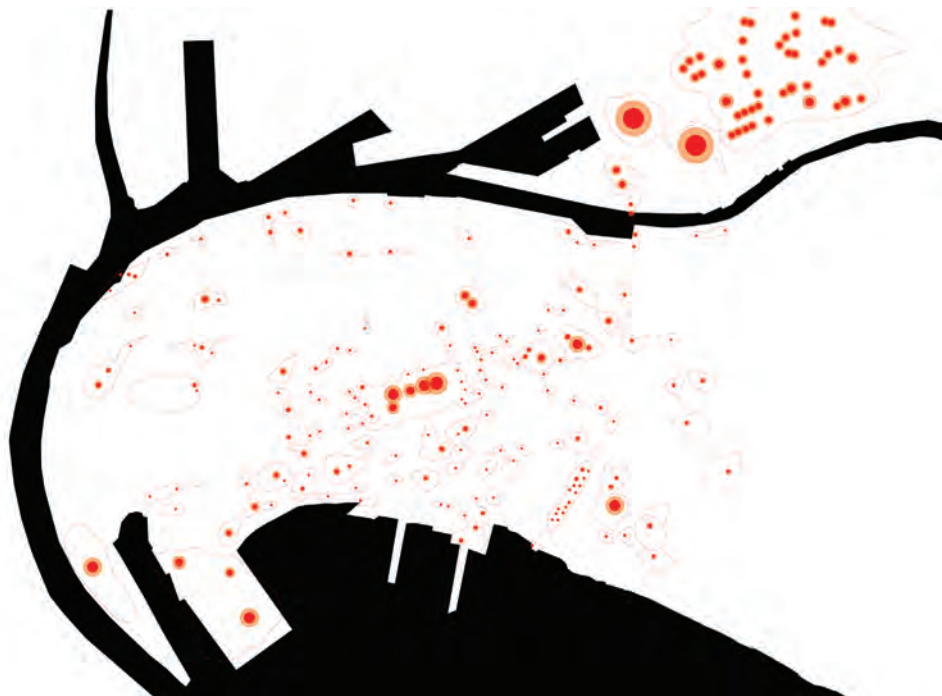


11: zoning and usage boundaries translated into express future areas of friction at fishermans bend



12: the stitch: develops as a proposal to integrate user groups and the government proposal, utilising local relationships





13: activity hotspots and areas of influence mapped over a work day



14: activity hotspots and areas of influence mapped after work hours,  
highlights the scarcity of activity in employment areas once industry closes



15: photographic documentation of urban landscape at  
fishermans bend: access to industrial sites

16: photographic documentation of urban landscape at  
fishermans bend: dross land







17: plan, the strip  
image source: Koolhaas, 1995

18: aerial perspective, the strip  
image source: Koolhaas, 1995

19: the allotments  
image source: Koolhaas, 1995

new economies that emerge with it's future residential neighbourhoods. The model sets out new spatial dimensions for Fishermans Bend to be reintegrated within areas exposed to land pressures. The project seeks a reoccupation of disused buildings and land by proposing hybrid programs and interventions that disintegrate the formal zoning between these activities.

### Project Description / 'the stitch'

The selected sites are framed by large scale infrastructure projects (the Westgate and Bolte bridges) to the north, Williamstown Road and the port to the south, and within a zoning scheme that places this parcel of land between heavy industrial to the north and residential areas planned as a garden suburb to the south. The Murphy reserve and the Port Melbourne Cricket Ground are the only exceptions of public recreation space along the industrial – residential edge along Williamstown Road. (refer fig.11, fig.12 p74) As boundaries, (i.e. reducing zoning reservations to thresholds: roads, buffers, easements, recreational grounds separating industrial and residential areas) these edges divide rather than integrate and overlap. These contrasting user groups are potential points of positive friction between public and private domains.

### Connections

'Mobility makes it possible to amalgamate physical distances and move from one themed environment to another, hence mediating access to un-themed spaces. Place or location in a networked society is reduced to scattered activity linked through infrastructure.'<sup>4</sup>

<sup>4</sup> Hajer M., Reijndorp A., In Search of New Public Domain: Analysis and Strategy, NAI Publishers, 2002, p56

*Once, a city was divided in two parts. One part became the Good Half, the other part the Bad Half. The inhabitants of the Bad Half began to flock to the good part of the divided city, rapidly swelling into an urban exodus. If this situation had been allowed to continue forever, the population of the Good Half would have doubled, while the Bad Half would have turned into a ghost town. After all attempts to interrupt this undesirable migration had failed, the authorities of the bad part made desperate and savage use of architecture: they built a wall around the good part of the city, making it completely inaccessible to their subjects. The Wall was a masterpiece.*

\_rem koolhaas

Housing projects sprouting in industrial precincts are proposed as enclaves and gated communities developing apart from the surrounding urban fabric. They also include mandatory adaptations for market oriented development, made attractive through privatisation.<sup>5</sup> The project attempts to utilise infrastructure as a means to prompt new urban form, challenging mono-functional environments.

The design interventions connect new social and spatial forms of the public domain through a programmatic inter-dependency, developed through an investigation of activity fields and spheres of influence. (refer fig.13, fig.14 p75) The design and it's programmatic incisions derive from specific local conditions and established relationships located between the Westgate service station and the community centre at either ends of Prohasky Street. This proposal for the cohabitation of residential and industrial communities, carefully negotiates integration and separation of activities and services. The following are the project attributes:

### Conversion of Industrial Warehouses

The re-appropriation of industrial warehouses and built infrastructure for purposes of technical education, looked at providing hands-on industrial partnerships and skills development for the workforce, addressing new economic growth sectors. The addition of child day care facilities and preschool education are supplementary requirements to new residential areas along with retail provisions etc.

<sup>5</sup> Hajer M., Reijndorp A., In Search of New Public Domain: Analysis and Strategy, NAI Publishers, 2002, p25



### Exodus or the Voluntary Prisoners of Architecture

Rem Koolhaas' hypothetical walled city in London is a narrative that deals with boundaries which in this case is a 'wall' that creates a restricted enclave aimed at a new urban culture invigorated by architectural innovation and political subversion. The ideas expressed in the writing and collages, conceptually frame the position on zoning.

The 'voluntary prisoners' and 'intense metropolitan desirability' discussed in Exodus relate to the existing separation of residential and industrial activities at Fishermans Bend. The inner-city housing model points to the probability that

this condition will become more acute in future proposals at Fishermans Bend.

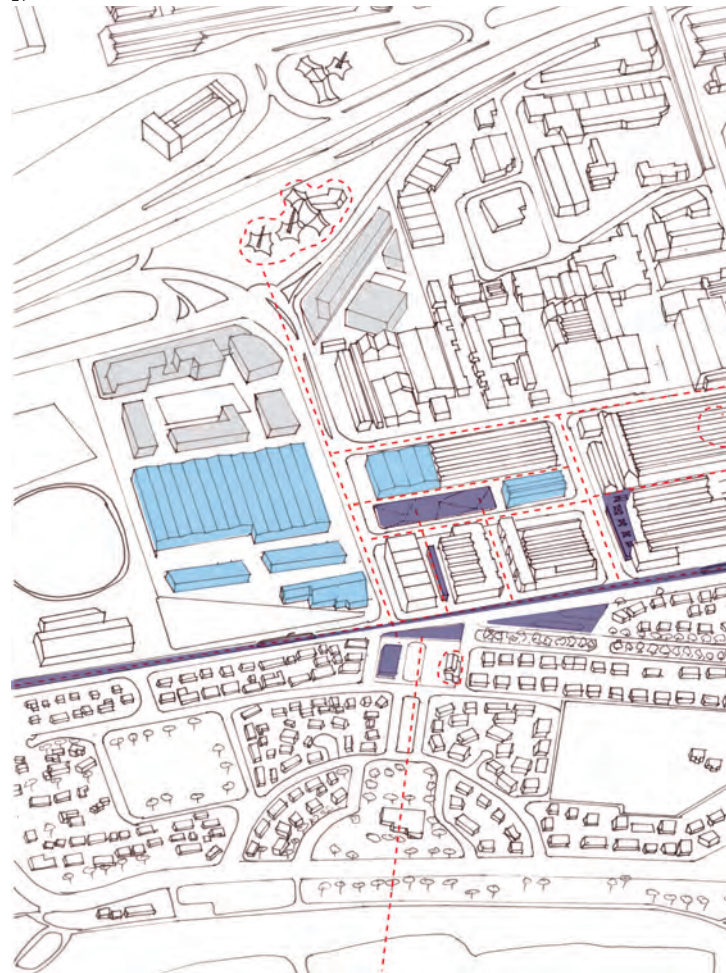
The creation of these thresholds is also discussed in the Eastern Waterfront in Mumbai.

19

20



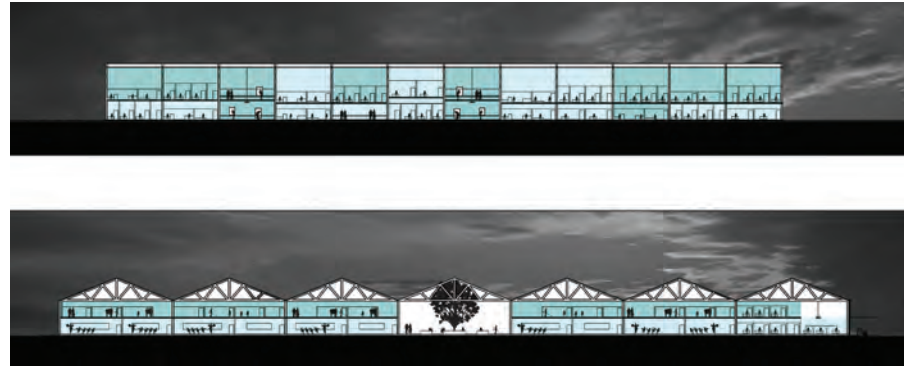
21



20: aerial perspective (existing) of area under consideration

21: aerial perspective of proposal highlighting design and programmatic interventions

- 22: longitudinal and transverse sections through container warehouse, reprogrammed as a tafe, changing day-night usage patterns
- 23: overall plan, highlighting the latent relationships and project strategies for conversion and rotational programs
- 24: flexible day-night usage study of loading bays, that function as public space, skate parks after work hours
- 25: flexible boundary tested through a fence of an industrial parking lot that serves as a farmer's market on weekends
- 26: kiosk located along industrial access points, provide rotational programs like lunch canteens that transform into bars by night



22

### Rotational Programs

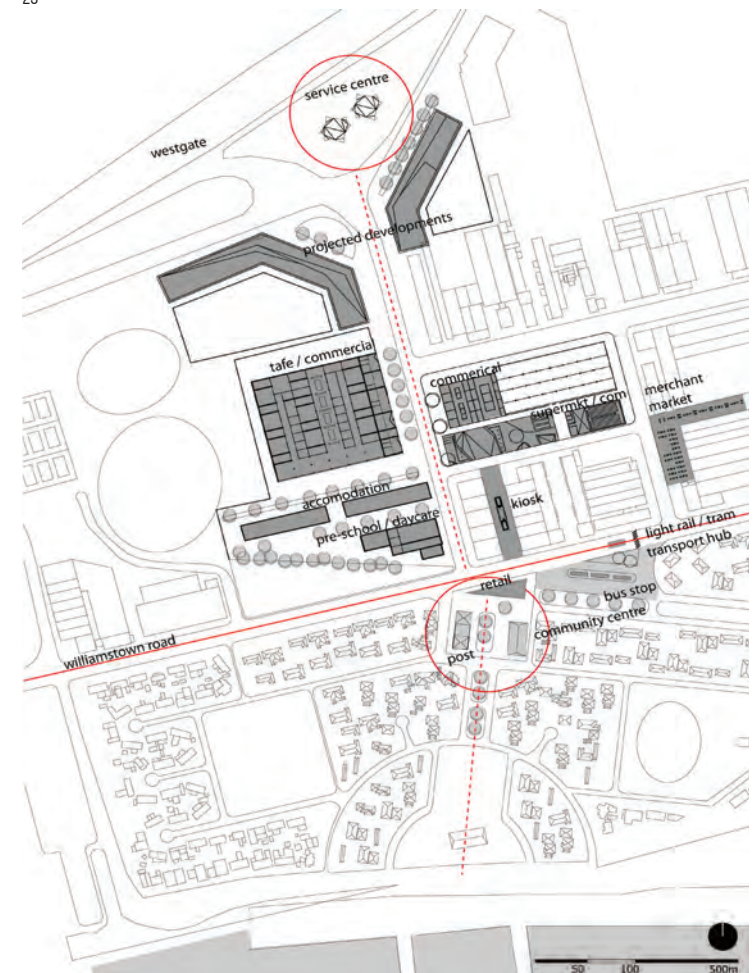
The protean model focussed on the use of space and extended hours of operation beyond the typical work day routine. This included setting up diurnal usage structures through flexible configurations and the introduction of seasonal uses like fresh produce / farmers markets as well as recreational spaces within the existing service and loading bays.

### Transport Hub / bus / tram / retail / public space

The integrative and anticipatory nature of the project looked at the creation of a transport hub, with an addition of the tram and light rail network connecting to Williamstown Road and overlapping with the metropolitan bus service. This extends the axis of the garden suburb. The ambition of the project is to connect residential spaces and commercial uses to the central business district and assisting in the proliferation of future developments in nearby industrial neighbourhoods.

Additionally, the project identified areas that could sustain medium-density housing development, in addition to the developments being proposed at Fishermans Bend.

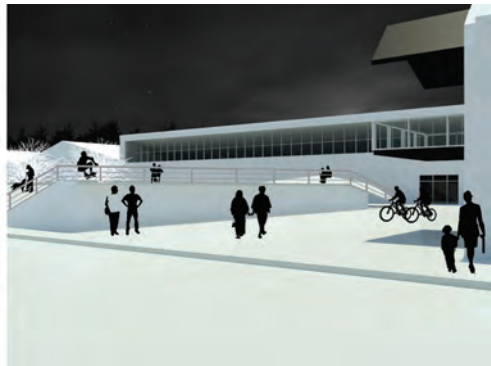
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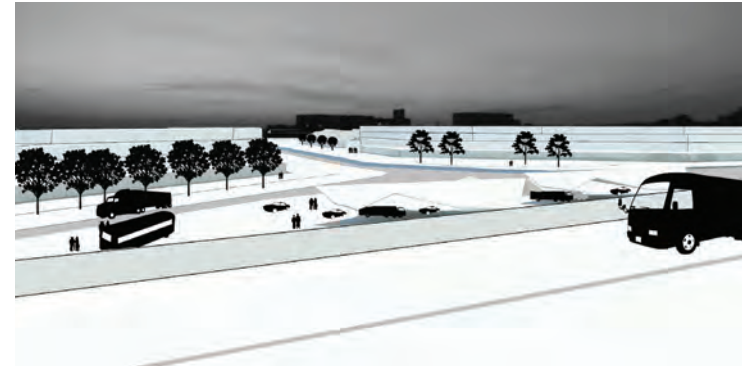
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26



27: section through loading bay / skate park highlighting the flexible usage patterns and different user groups at different times

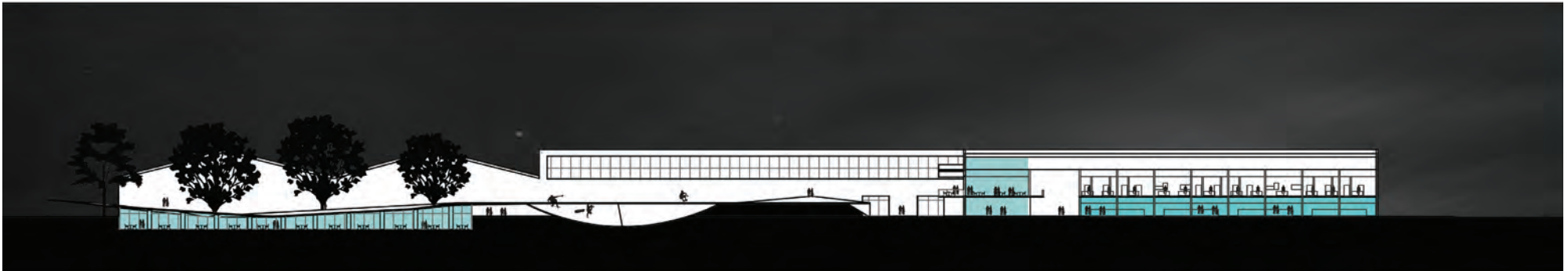
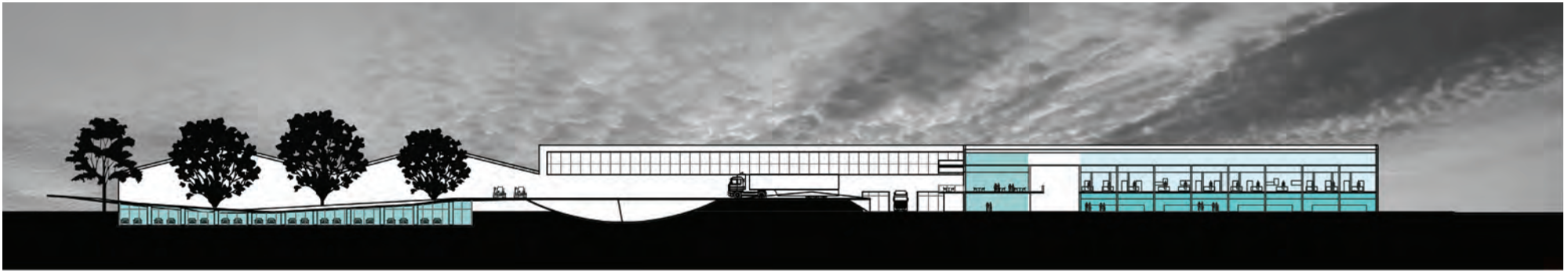
28: view of the project from the westgate freeway, with areas for new residential development

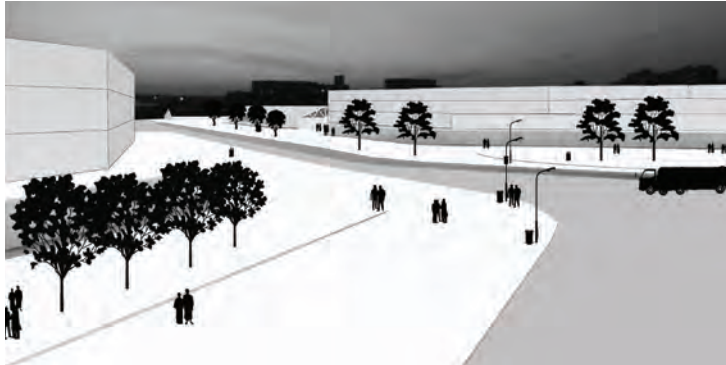


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29

28: view of the project from the service station, reorienting access to the industrial area using housing projects as a gateway

083

## Summary

Operating on the hem of post-industrial sites in Fishermans Bend, this project proposes a series of new programs into the existing building stock, with small-scale architectural interventions aimed at creating a new connection between public and private use.

The research produces a spatial synthesis and establishes a program to contend with industrial pockets vulnerable to the developer juggernaut. It is a scheme for reading, adaptation, conservation, evolution and potential of infrastructure environments with intrinsic qualities and prospects. As the dynamics governing this context are in flux, the research is by nature conceptual.

The city responds to active forms (regulations, financial bubbles etc.) but relies on the generic to add layers of activity, though predetermined urban relations and functionality that feeds into a network. The project delivers a model of seeding through which industrial precincts can accommodate adjacent neighbourhoods within its existing grain and more importantly allow an enriched urbanism to exist, one that can only endure and continue to evolve with the dynamic relations it creates and sustains with future neighbourhoods.





### **Epilogue and Preface for Sunshine**

The contemporary urban landscape is forged by extraneous forces and tactics that collide. The projects thus far, have become a converging factor between architecture and context, policies, identity, infrastructure, appropriation and the imagination of the modern metropolis.

### **Eastlink / observations**

The Eastlink has permanently transformed not only the physical dimension of the urban landscape, but has also altered the relationships at a local (neighbourhood) and metropolitan scale. The sequences of development reveal that the changes in velocity of access by a high-speed roadway make it possible (or sometimes imperative depending on location of access ramps to the Eastlink) to bypass certain networks and hence forge more efficient delivery models. As distribution networks in Melbourne's south-east factor in new logistic variables, the investment in Central Dandenong continues and property values surge at a suburban scale.

### **Inference**

There is a necessity and long term benefit to maintaining industrial services and hence economic activity and employment opportunities. This extends to the infrastructure and it's networks of connection that make abandoning the field wasteful. Collaborations of new industry and activities need to be considered. With development pressure and new residential construction there is a growing concern as to the future of employment corridors. The future lies equally in maintaining long-term economic feasibility of the area and meeting the housing demands of a growing population.

There are several approaches and degrees of understanding that are extracted from this project and evolve in the interventions at Fishermans Bend as well as in the final dissertation. The project at Dandenong set in motion the essential understanding of shifting industrial practices in Melbourne, the nature of and factors that affect their change, the infrastructure and building stock that become a residue of cycles that are continually evolving, and more specifically the intermediate practices that occupy (and can develop within) a transitional landscape.

### **Fishermans Bend / observations**

The city transforms almost instantly into unrecognisable forms. Industrial trends assert variables through restructuring and resettlement. Most post industrial precincts have an over-investment of connective and built infrastructure, with the potential for adaptive reuse. Fishermans Bend is at the centre of these shifts with the port operations being a critical factor in the volume handled by logistic operators.

Additionally, aftershocks of the financial crisis, had manufacturers downsize their production operations at Fishermans Bend which is internationally recognised for its contribution in automobile and aeronautical industry. This gross landscape is an opportunity to prescribe urban reforms and create positive interactions within the precincts of their location.



### **Inference**

Where the Eastlink, re-routed cycles of distribution, Fishermans Bend witnessed the Port of Melbourne re-distributing its operation which reflected in the suboptimal industrial activity near the port. The scheme utilises the nature of infrastructure in which it is placed to create new forms of access while building on local relationships.

Through social and economic inclusion in future neighbourhoods, and responses to pressures of new developments that arise from location, the programmatic substitutions and re-appropriation aimed at mediation in the context of regional change.

### **Recovery and Sunshine**

The key concept of recovery develops through the projects at Dandenong and Fishermans Bend as revitalisation of vacating industrial and logistical buildings. This strategy was instrumental in setting up a framework for the final project at Sunshine that looked at a combination of reuse along with renewal of non-residential uses, transforming and extending the industrial use of the site with activities that opportunistically make use of the built form, urban fabric and the networks it sits within.

This understanding compelled the need to evolve a more flexible means of interpreting the city, and developing a strategy that is expansive and self-sustaining, evolving from a multitude of perspectives and varying densities. The proposal looks to accommodate industrial and infrastructural trajectories of the city and the role they play in defining the image of the city.

Fundamentally, the final project expands on the Port of Melbourne updating its delivery models and the regional change brought about in the areas that these shifts now locate themselves in. The sheer volume of traffic has the momentum to drive relocations of people, industries and economies and transpose development cycles at new locations to which they move.

The subsequent projects follow the industrial and logistical traffic to a progressively expanding nerve centre of flows at Sunshine, that is the basis of industrial, post-industrial and information economies.



# SUNSHINE

SCENARIO CITY: STAGING THE INTERFACE BETWEEN INDUSTRY, NETWORKS OF DISTRIBUTION, LANDSCAPE AND THE PUBLIC DOMAIN /  
URBAN TRANSFORMATIONS / WAREHOUSING : DATACENTRES / HOUSING : LANDSCAPE / DISTRIBUTION : DISASSEMBLY















sunshine occupies domain of transitional industry and post-industrial ecologies, an urbanism defined as much by the density of exchange as the sparsity of built form; a refuge for an intermediate-scale between micro and super-scale

scenario city is a 'what if proposition'; a design strategy of assemblage, staging transformations between gradual and utter, and imagining a condition between emptiness and intensity... choreographing sequences and scenarios through testing urban form in a dynamic field of interrelated forces

scenarios are temporal, as they unfold they create a peculiar urbanism, an exploration into the latent opportunity within shifts; unfolding from a logistical efficiency. spatial experiments exercise the logistical networks and residential potentials of the site through efficient, expansive, generative urban regeneration

- 02: elevator cover of 1906 sunshine stripper harvester  
image source: museum victoria
- 03: aerial view of sunshine harvester works, sunshine, 1955  
image source: museum victoria
- 04: aerial view of a portion of sunshine, 1924  
image source: museum victoria
- 05: sketch of localisation of industry and logistics at sunshine, as a stage for industrial clusters

Introduction

The city is dichotomous. It's growth and density is prescribed by planning and insertions of infrastructure networks, but defined by urban shifts that respond to dynamics beyond those dictated by traditional methods of planning. Urban planning that operates within isolated silos of zoning have to a great degree proved ineffective predictions for absorbing future development and intensification.

Melbourne no longer conforms to a conventional homogenous city. Planning frameworks (Melbourne 2030 Planning for Sustainable Growth superseded by Melbourne @ 5 million) propose the development of Central Activities Districts (CAD) designed to consolidate growth, regulate potential and subscribe to a form of transit oriented development.

The heterogeneous or polycentric Melbourne will invest and develop predetermined areas:  
Box Hill / Broadmeadows / Dandenong / Footscray / Frankston / Ringwood

Whereas, its highest growth areas are:  
Casey–Cardinia / Hume / Melton–Caroline Springs / Whittlesea / Wyndham

The intersections and entanglement of transport systems and industrial / production resources in these areas becomes crucial to the future of the city. The resultant urban form will be a product of isolated elements, clustered programs connected by infrastructure and integrated logistic networks. In such a city, it is consequential intersections with corridors that bring about interaction.

### Project Overview

The suburb of Sunshine has its roots woven with the industrial ambition of H. V. McKay and the Sunshine Harvester Works. With the manufacturing and industrial facilities occupying its centre, the town was founded on Ebenezer Howard's Garden City movement of the early 1900s. Residential areas were organised around green spaces that radiated from employment opportunities, sustaining a blue-collar workers suburb.

Sunshine is in flux, affected by rapid transformations within its metropolitan and regional context. The concentration of distribution centres, warehousing infrastructure and logistic operators in Sunshine links directly to the decentralised stacking of the Port of Melbourne, proximity to the proposed regional rail link, connection with the international airport and regional Victoria. The change is not a linear process, but a results from a combination of factors: industrial and infrastructural intensification in Melbourne's west, regional railway linkages, the fluctuating urban growth boundaries, and distribution of population near employment centres. De-industrialisation is replaced with re-industrialisation.

Large parcels of land within this area are waste management landfill sites. These locations along the Kororoit Creek require remediative measures together with vacating post-industrial sites. The geographical significance of Sunshine, lends itself to a description of a mega-region populated with temporal program. These locations can substitute hierarchical zonal organisation with combinatory clusters of industry, logistics, housing, employment and retail commerce, together with environmentally sensitive sites that require remediation.



The former Huntsman Chemicals site, in Sunshine and the surrounding industrial precinct was selected as an investigation area. Industry is vacating the site, after which remediation process will commence. The 41 hectare site sits between storage warehouses and logistic operations. It is adjacent to landfill operations as well as the ecologically sensitive Kororoit Creek. Huntsman Chemicals is ideally located to connect to the Western and Calder freeways, and the site stands to benefit from proposed metropolitan infrastructure projects and regional networks.

### Organisation

Sunshine as a staging ground for a diverse urbanism is investigated through three combinations. These relationships are designed as variables that can exist in isolation while being infused within the current context. The project content is arranged through this classification that is defined by the nature and intensity of interventions. The dimension of time through which they can occur is critical to integration within the urban fabric. The combinations and relationships are:

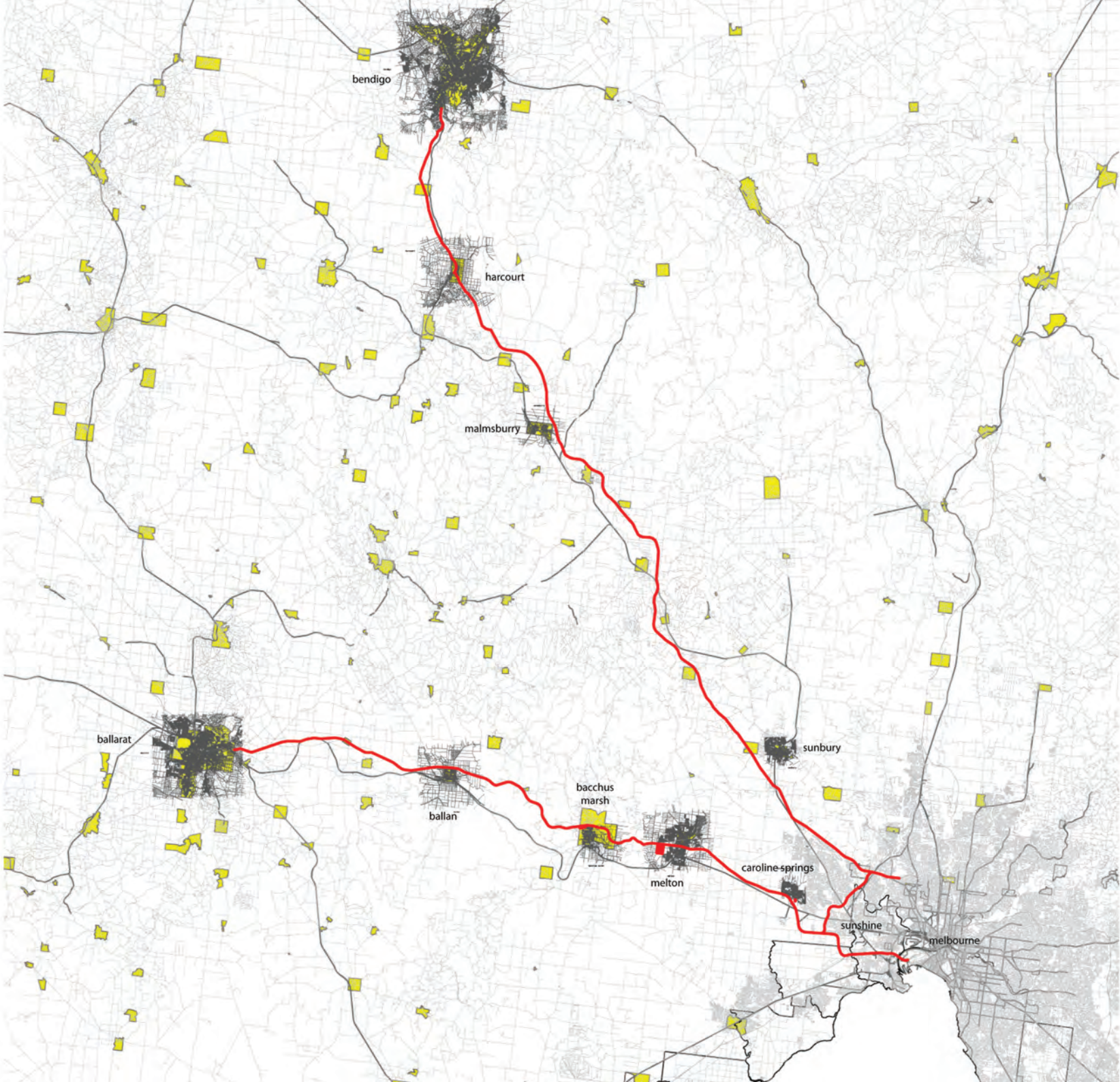
**warehousing - data centres** (the urban structure within which they can exist is available, and transformations can occur rapidly) **immediate**

**housing - landscape** (activation through housing is a slow process as it is shaped by landscape systems with an urgent need of remediation) **gradual**

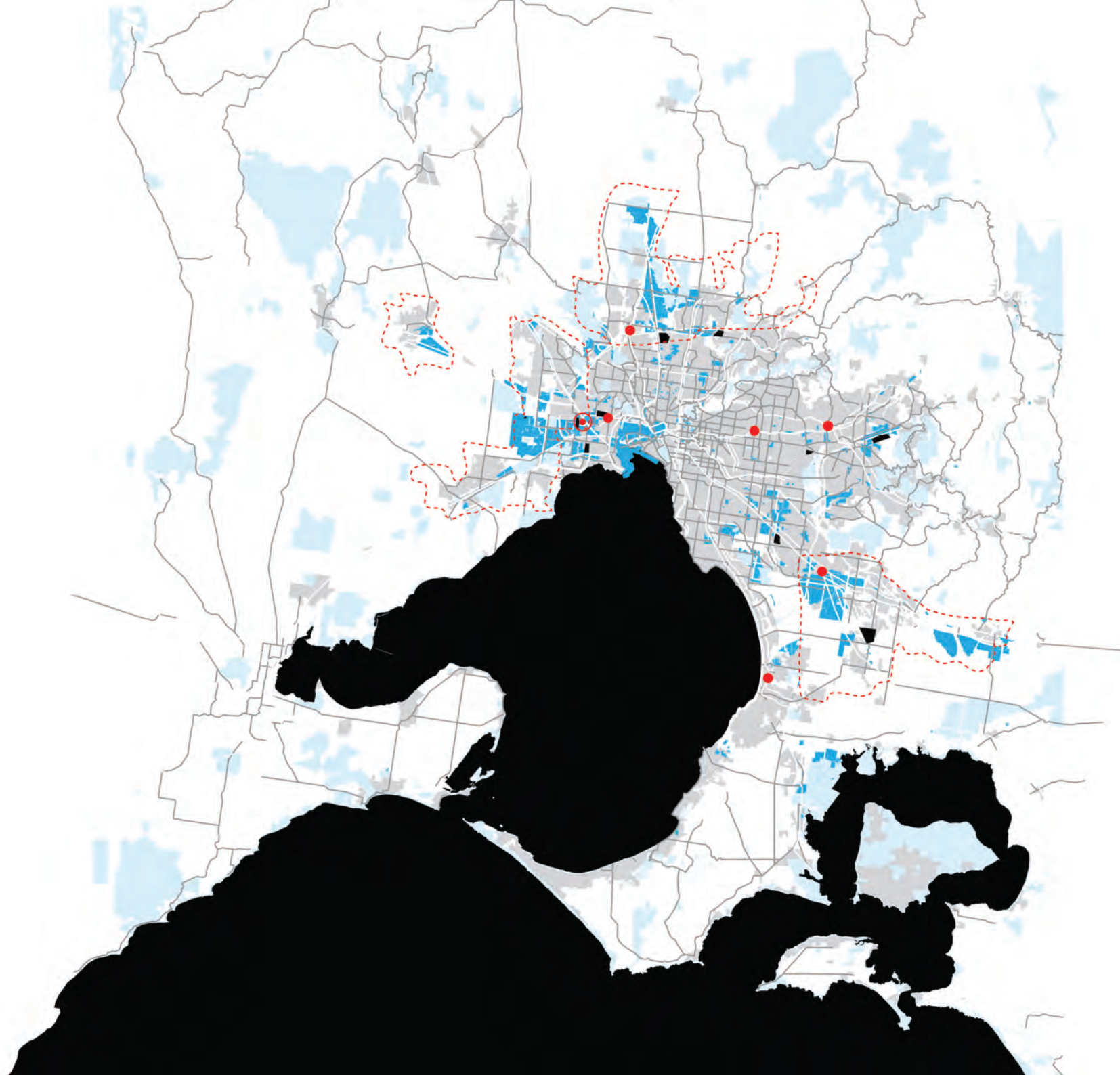
**distribution - disassembly** (the location of this project being a post-industrial brownfield site, this process relates to the remediated landscape component and can occur as toxic sites are cleared for new development) **intervals, slow**

- 06: regional context of sunshine, tracing industrial activity and towncentres
- 07: metropolitan areas of production-distribution, consumption and disposal
- 08: contextual plan of sunshine, industry and logistical centres and waste disposal sites
- 09: transformation of the huntsman chemicals site, 2009-2011  
image source: nearmap
- 10: photographic documentation of product cycles, from storage to scraps, moving east-west along somerville road, sunshine
- 11: temporal landscapes, occupy the local and service the global

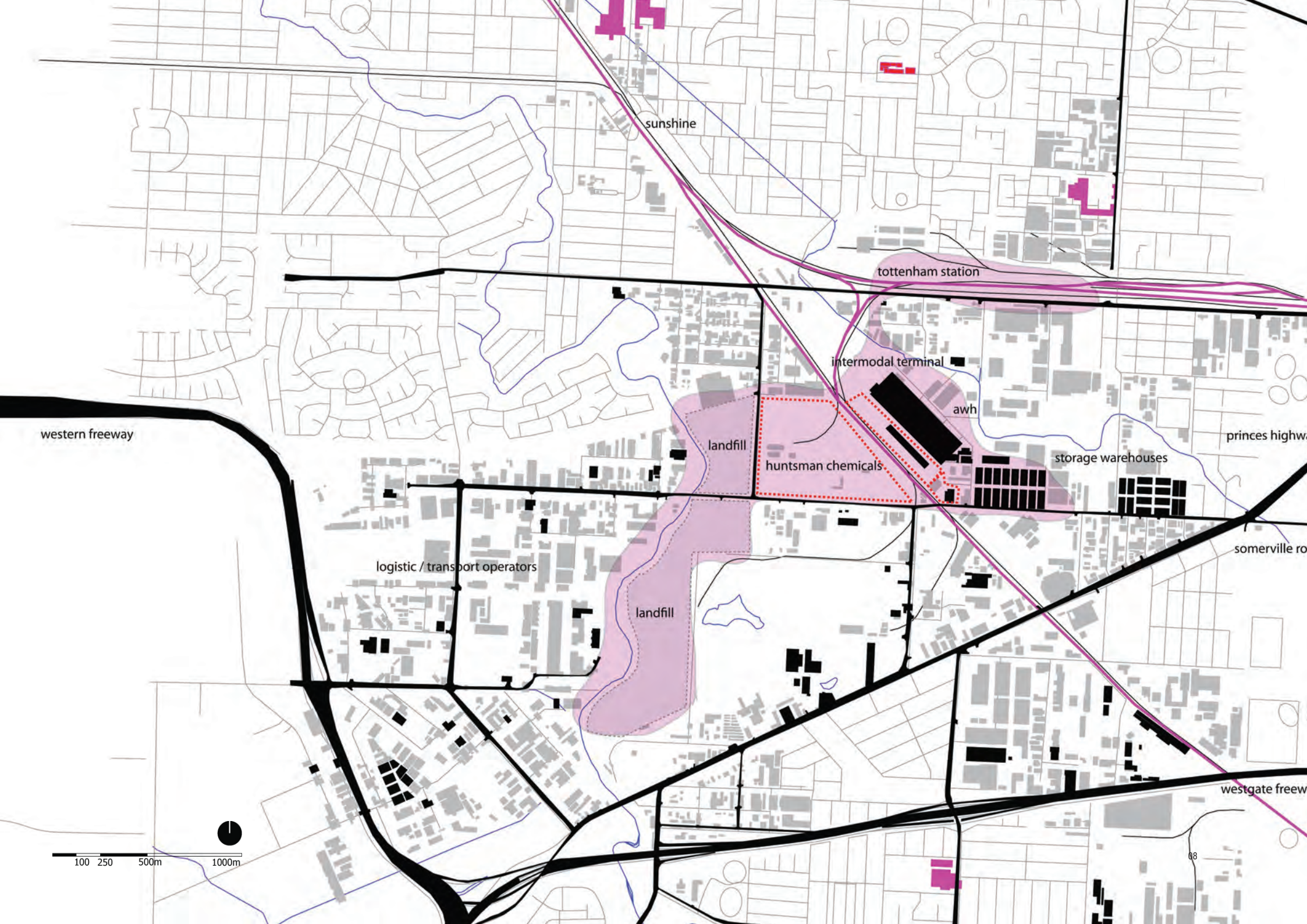
















12-10-2009



28-06-2011



13-11-2009



21-06-2010



20-10-2010

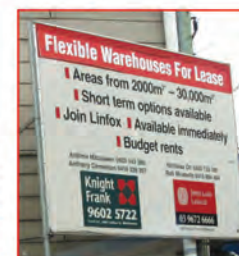


06-04-2011













# WAREHOUSING : DATACENTRES

'We supposed that an information society would replace industrial society, whereas the information society has in fact been added to the industrial one, increasing its intensity.<sup>1</sup> Industry is changing but too slowly compared to economic growth'<sup>2</sup> \_john thackara

### Introduction

In an increasingly globalised world, devices that enable interaction and storage are portals to the seemingly endless virtual infrastructure (e.g. National Broadband Network). Data, information and knowledge flows are routed through fibre optic and wireless channels, and fragmented into high capacity storage drives.

At the source of the concept of this 'cloud' is converged infrastructure. Products have now become services offered by vendors. Programs, applications and data are stored on centralised servers and accessed by the user through devices (like personal computers, workstations and mobile phones, tablets, etc.) that operate as terminals or gateways. The off-site storage of information and applications is made possible through a pervasive network of access points and data services, of computation as a public utility. But the reality of the cloud, and of the internet itself, is that it is a physical infrastructure of cables which run beneath streets and oceans, connecting exchanges and switches to servers in offices, homes and data centres.<sup>3</sup> Cloud

<sup>1</sup> Thackara J., In the bubble : Designing in a Complex World, The MIT Press, 2006, p10

<sup>2</sup> Thackara J., In the bubble : Designing in a Complex World, The MIT Press, 2006, p15

<sup>3</sup> Bridle J., Secret Servers, September 13, 2011 (web link: <http://booktwo.org/notebook/secret-servers/>) accessed on January 23, 2012

computing is grounded in a physical reality that occupies quantifiable floor space. Andrew Blum identifies these physical points in the network as 'choke points', geographical locations where the networks of networks connect to one another 'through something as simple and tangible as a yellow-jacketed fibre-optic cable.'<sup>4</sup>

'e' service sectors (e-commerce, e-business etc.) are growing exponentially and they rely progressively more on efficient supply chain management, logistics and infrastructure. This cyber expansion is closely followed by a growing spatial footprint and organisational framework whose pace of both augmentation and distribution of resources is extraordinary.

Thomas Freidman's 'The World is Flat'<sup>5</sup> establishes the polemic of a world connected by virtual highways of the information age, where content production and management are not location specific; that we now compete internationally on a level playing field. Richard Florida however, argues that the world is indeed spiked. The changes of globalisation have dramatically altered the economic landscape but it certainly has not equalised it.<sup>6</sup> Even with diffusion through satellites and cables, the mere clustering and concentration of talent produces a discernable urban footprint.

<sup>4</sup> Bridle J., Secret Servers, September 13, 2011 (web link: <http://booktwo.org/notebook/secret-servers/>) accessed on January 23, 2012

<sup>5</sup> Freidman T., The World is Flat: A Brief History of the Twenty-first Century, Farrar, Straus and Giroux, 2005

<sup>6</sup> Florida R., The World is Spiky, The Atlantic Monthly, October, 2005 p48-51

### Performance Optimised Data Centres

Performance Optimised Data Centres (POD) like Hewlett-Packard's EcoPOD Centre, are modular integrated data centres housed in purpose-built modules. Hewlett-Packard notes that the unit can compresses the workload of a 10,000 square foot data centre into 900 square feet. Additionally, the energy savings demonstrates reducing overall operating costs.

description extracted from Hewlett Packard (web link: <http://h71028.www7.hp.com/enterprise/cache/595887-0-0-0-121.html>) and Data Center Knowledge (web link: <http://www.datacenterknowledge.com/archives/2011/06/07/hp-unveils-updated-ecopod-modular-design/>) accessed on August 23, 2011

This spiked condition can be extrapolated into metropolitan corridors, explained, for example by information-technology based cities sprouting in Asia. Place that is seemingly immaterial, remains the dominant axis of our time.<sup>7</sup>

The initiative of the project to cluster data centres and storage warehouses locates itself between the rationale of Freidman and Florida. Logistic and industrial centres inhabit the local but service the global, and share physical and virtual networks. Logistic and industrial operations forge a symbiosis that is driven by fluctuating organisational devices that are spatially quantified and linked.

Populating technology consultancy services, server farms and data centres with traditional forms of warehousing and logistics facilitates a relationship between divergent storage elements that do not necessarily interact directly with each other. The speculative pairing resists zoning.

### Narrative Scenarios

"The corner store may not merely be a milk-bar but a typology between a large chain electronics store and a electronic component wholesaler that serves both businesses occupying the fringe of information technology, hardware engineering and a growing neighbourhood"

"The cafe that spills into the street, will be frequented by truck drivers, crane operators in high visibility gear and consultants, technology analysts and IT

technicians that escape hermetically sealed confines of server farms"

This project celebrates an emerging condition, that is the physical implications of digital abundance at an urban scale. The visible manifestations will be insertions in and around physical storage warehouses to locate servers for bits and bytes of information data.

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<sup>7</sup> contrasting viewpoints of Freidman and Florida were highlighted by Herron J., in 'Borderland / Borderama / Detroit' essay appeared in Wilkins G., Distributed Urbanism: Cities After Google Earth, Routledge, 2010 p81

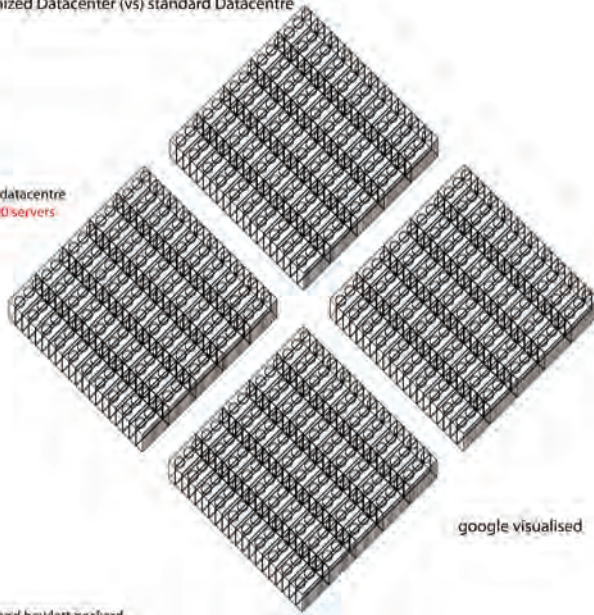


## EcoPOD modular Performance Optimized Datacenter (vs) standard Datacentre



100 sqm modular datacentre ~ 1000 sqm datacentre  
capacity: 44 industry standard racks ~ 4400 servers

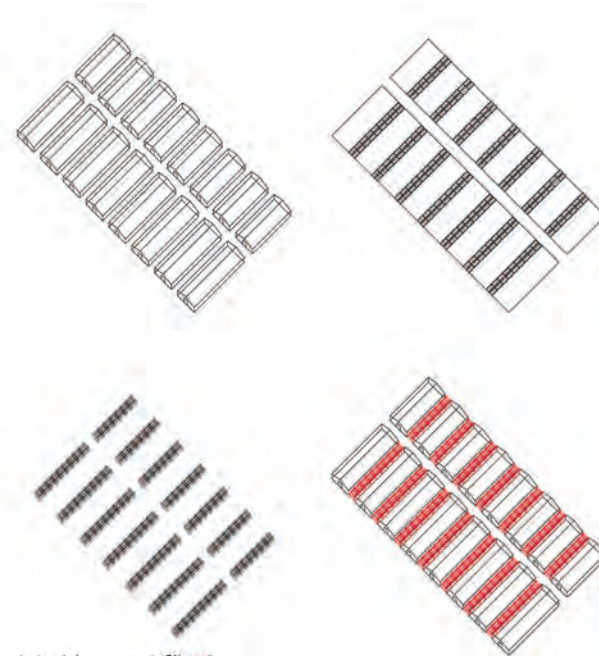
google 900,000 / 200  
intel 100,000 / 23  
facebook 30,000 / 7  
verizon 25,788 / 6  
time-warner 24,817 / 5



sourced from datacentreknowledge.com and hewlett packard

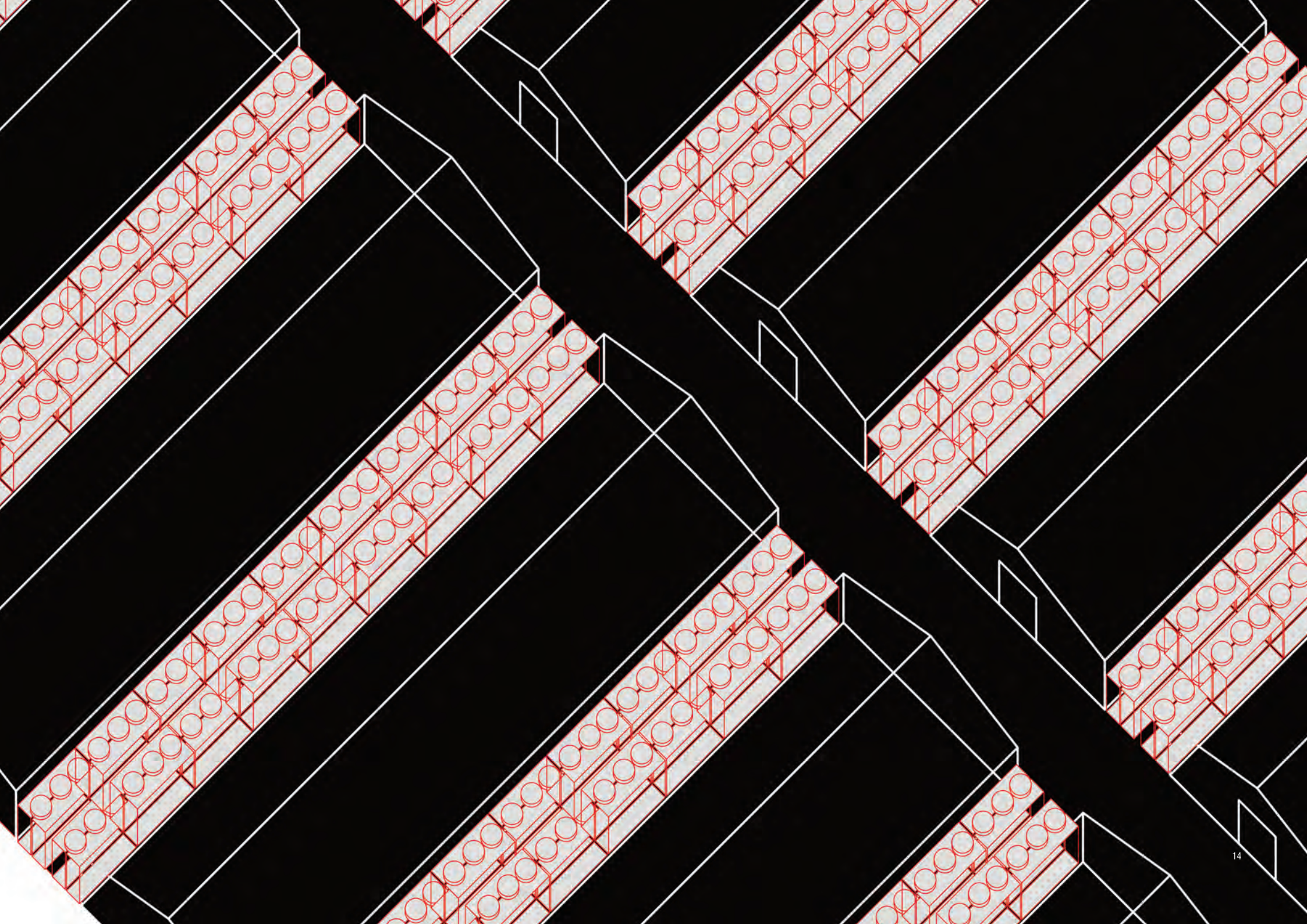
12-15: drawings investigating modular performance optimised data centres and the spatial footprint when compared to traditional data centres, in theory it is possible to fit google in sunshine

locating datacentres in sunshine, along somerville road in the interstitial spaces between warehouses and testing an urbanism in which supply chain management will co-exist with information technology service providers



modular performance optimised datacentre infill 224











### **Scenario: warehousing - data centres**

Lower investments, and overheads for both manufacturers of proprietary hardware and software (or original equipment manufacturers / OEM) as well as a scalable usage model of 'pay as you go' are advantages of the cloud service model. While applications and solutions that utilise networks, centralised processing and storage, continue to be integrated into consumer electronics and business platforms. Industry-wide roll outs in the next generation of operating systems will compel an exponential rise in data storage and networking equipment. Consumer / client access points will decrease in physical size, but the infrastructure and computing environments will grow considerably larger.

The concepts embedded in this project examine a scenario that arises from melding storage of an industrial scale with data storage from an information economy. Data centres and warehousing are programs that supplement each other as operations driven by an interface of delivery, distribution and service. The fundamental difference is the nature of storage.

The project locates itself on Somerville Road in Sunshine, an area dominated by a sequence of identical warehouses and logistics operators. The warehouses are leasable with flexible solutions for bulk storage and linkage to supply chain solution providers like Linfox. The urbanism is inherently temporal; defined by deliveries, exchanges and operations within the confines of massive warehouses. The area is serviced by employees of logistic operators ranging from truck drivers, fork-lift operators, indexing / sorting and administrative staff.

Characteristic features of this project are staged or phased by a dimension of time. The physical footprint of activity is controlled between existing storage warehouses. The interaction between physical and digital is described by an understanding of the clustering of various scales of activity and opportunity provided through their interaction. Density of activity is cumulative, providing intensity of uses and users. There are two typologies of space: the programmed areas of operation and supplementary areas that address the need for amenity, which span the gamut from mechanics and information-technology related repairs / services, dealerships that supply and provide hardware, to information technology start-ups and smaller spin-offs. Physical and digital storage unfold from a modular understanding of space (from pallet, racking, containers to disk drives and server racks).

The initial phase of drawings located the spatial footprint of performance-optimised data centres as a starting point for investigations into urban form. The development then expanded to include mobile data centres, and ultimately enlarging their scale of operation to form modular data centres as the concentration of computing needs expands. Services include consumer based e-commerce and local retail providers moving to online models. As an example, since 2010, the rapid shrinking and closure of Australian bookstore-chains has revamped the distribution models for books and print media. Online retail is expanding in all its forms and encourages a clustering of resources. This simple practicality can become an urbanism expanding and intensifying. Server and warehouse locations within a network from trucking to office parks become practical locations for online retail operations.



16: phase1: is a look at the existing condition of storage warehouses along somerville road, that offer flexible storage solution and possibility to connect with supply chain management



17: phase2: explores the addition of a new form of storage through data centres, examples in this stage include mobile data centres and the beginnings of performance optimised modular data centres in spaces between existing warehouses

18: phase3: additional insertions of modular performance optimised data centres in between warehouses, along somerville road, transformations in the vicinity of this development, including technology consultancy services, addition of amenities and cafes as well as industrial easements that develop as outdoor work space and gathering spaces



10 20 50m

18





21



22



111



stage1

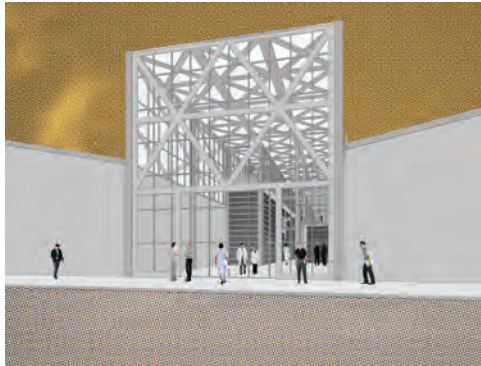


stage2



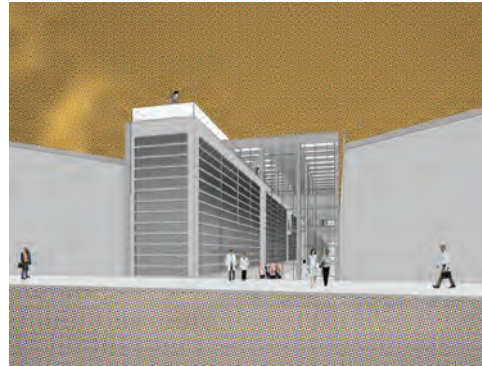
stage3



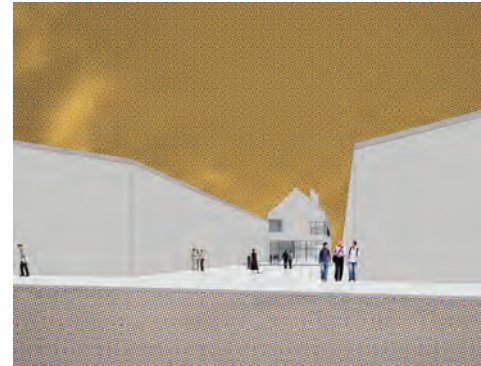


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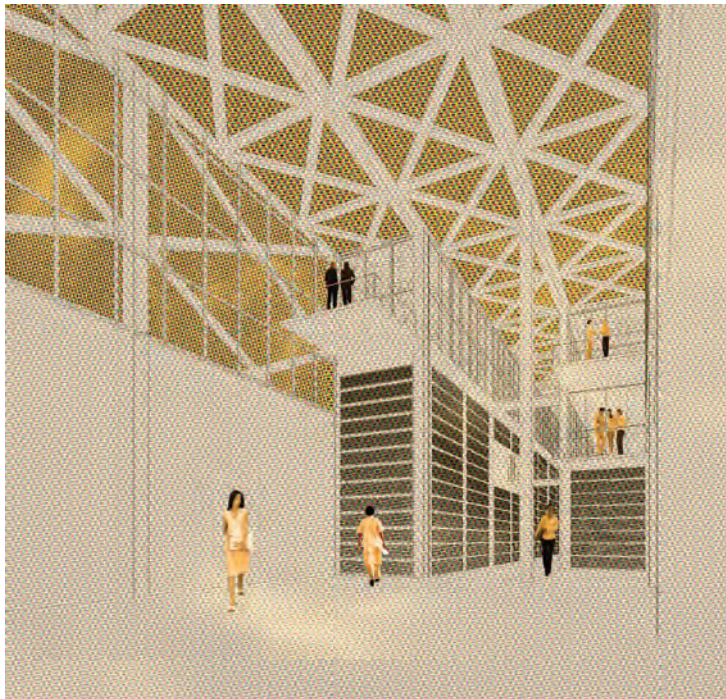
27



25



26



The rigid fabric of existing industrial buildings lends a definition to the newly proposed urban form of data storage. Scale of insertions is limited by the existing network of storage warehouses. The resulting urbanism is articulated by the clustering of similar but vastly different storage material and is energised by its participation, engagement and interactions with the local and metropolitan context as well as international markets. This project defines the program of data storage and is developed within a network of logistical connections that intersect with the site. The resultant urbanism is allowed to play its course.

- 23: site section along somerville road, with stages of development and insertion of data centres, transformation brought about by the interaction of physical and digital storage
- 24: architectural expression of modular performance optimised data centre
- 25: architectural expression of modular performance optimised data centre
- 26: interstitial space utilised as demonstration areas for smart-homes and future technology
- 27: interior perspective of data centre and commercial office spaces





30



31

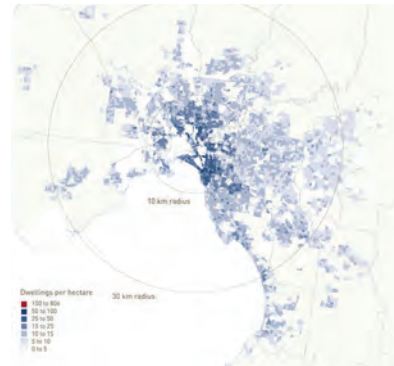


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**HOUSING : LANDSCAPE**



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32: gross dwelling density, 2001, melbourne  
image source: Australian Bureau of Statistics

33: population density, 2001, melbourne  
image source: Australian Bureau of Statistics

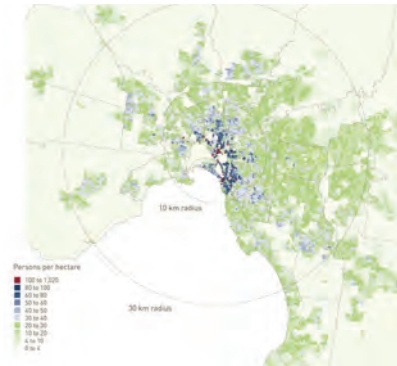
'Growth for the sake of growth is the ideology of the cancer cell' \_edward abbey

### Introduction

The preliminary projects in Dandenong and Fishermans Bend were closely associated with industrial and post-industrial futures. The pressure exerted on their physical location and modes of operation comes from market-driven development and planning policies. Further, new transport routes and distribution networks redefine the perception of these industrial belts. They are much more visible than before. Residential and commercial development emerge in close proximity. These projects were conceived as a reaction to newly proposed developments, without actively absorbing program. Broadly, densification has been a concern throughout the thesis and continues as a central theme in Sunshine.

### Density, Intensity

The modern city has a compact and rigid organisational structure; an enlarged, concentrated version of the town. In a sense, the contemporary city is a re-densification of an already dense condition. Density within this work refers not to the traditional urban core (physical density), but to a density of logistical, economic and industrial functions. As such it is understood in terms of constant change with an architectural and urban proposition designed to accommodate that. Density which is static is replaced by intensity which is dynamic and brings in time and multiple uses. Density in its traditional sense refers to a master plan, where intensity is a scenario strategy.



33

The second of three Sunshine projects investigates a strategy for intensification through collective housing. This addresses the housing shortfall in Melbourne and integrates landscape systems as an extensive and unified subsystem with the physical and behavioural environment. The research evolves a method of reacting to brownfield post-industrial land in the broader context of landscape ecology and necessity for growth, that recognises the urgency and slowness of the remediative processes. The project proposes that the site be used as a laboratory for sub-soil decontamination and phytoremediation, a process through which cultivated plant matter eliminates toxic contaminants. This process will be integrated within the transformation of the full site, with smaller sites being made accessible to residential communities for recreation, education and industrial activity.

Planning policies introduce density which increases the pressure on industrial zones. Opportunities emerge through these changes, to re-work and introduce residential density at their perimeter of industrial activity. The research on housing studied various types, densities and amenities, testing possibilities and associations with open spaces. The project evolved proposing housing as focal points in the midst of the large industrial sites and infrastructure networks. As opposed to a typology of programmatic isolation (enclaves), this project amplifies relationship between dissimilar activities and surroundings.

The first project (warehousing - data centres) and final one (distribution - disassembly) examine de-industrialisation and resource concentration. The housing - landscape project describes a dispersed urbanity; it is a proposition to address growing concerns of metropolitan housing and intensity of activity.



**Fresh Kills Park (Staten Island, New York)**

The Fresh Kills Park is the winning proposal by James Corner Field Operations for the transformation of the world’s largest landfill site at Staten Island, New York. The project seeks to convert the toxic land into a productive and cultural destination, making the park a symbol of renewal and an expression of restoring balance in the landscape.

James Corner’s understanding of broader systems of landscape design factor in the 30 year vision plan, that develops the full extent of the project through phasing of operations. Initial development will focus on providing access to the site as a recreational space. Covering 2200 acres (8.9 sq km), the project will accommodate a range of uses including cultural, athletic, educational programs as well as the reclamation of wetlands.

The project mirrors many of the issues within the context of landfill sites in Sunshine. Though they vary in scale and geographic context it highlights strategies and the urgency to speculate about the productive integration of (formerly) toxic landscapes in the contemporary city, while recognising the incremental nature of the proposal.

project description extracted from City of New York Parks and Recreation (web link: <http://www.nycgovparks.org/park-features/freshkills-park>)

- 34: landfill operations, staten island, new york  
image source: James Corner Field Operations
- 35: aerial perspective, fresh kills park proposal, staten island, new york  
image source: James Corner Field Operations
- 36: site plan, fresh kills park proposal, staten island, new york  
image source: James Corner Field Operations
- 37: phase development plan, resh kills park proposal, staten island, new york  
image source: James Corner Field Operations

	38
38: aerial view, atlanta beltline, atlanta, georgia image source: James Corner Field Operations	
39: redevelopment proposal, atlanta beltline, atlanta, georgia image source: Perkins + Will	39
40: view of light-rail and park network, atlanta beltline, atlanta, georgia image source: Perkins + Will	
41: landscape as infrastructure, tracing landscape systems, kororoit creek, easements, toxic sites, parks and recreation areas and landscape networks, sunshine, melbourne	

Atlanta Beltline (Atlanta, Georgia)

The Atlanta Beltline is a comprehensive redevelopment and mobility project of the historic 22-mile railroad corridor circling downtown Atlanta and connecting 45 neighbourhoods directly to each other. The project is intended to shape the growth of Atlanta through the next several decades, providing a green beltway of park networks, multi-use trails and light rail, which will also reuse and revitalise old rail tracks and restore local ecosystems.

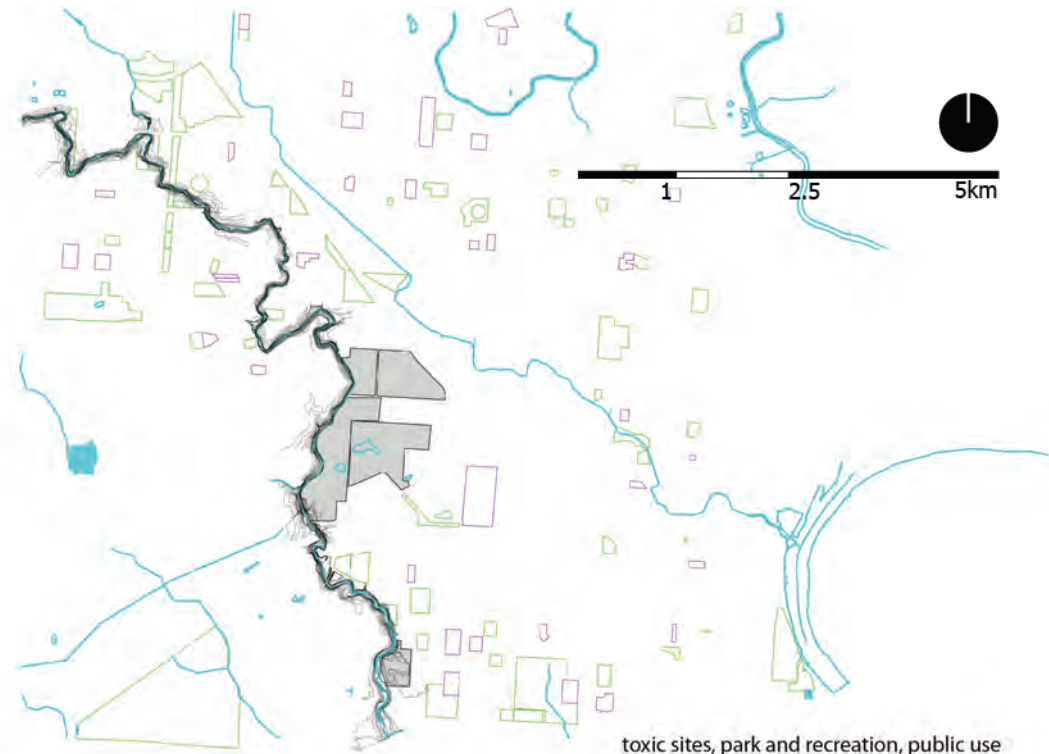
The study conducted by James Corner Field Operations and Perkins + Will, focused on establishing future connections through existing industrial and commercial parcels, while maintaining sites that are appropriate and flexible for potential redevelopment scenarios.

The significance of this project and its relevance to Sunshine is the utilisation of landscape redevelopment strategies as a pivot to create new integrative networks as well as establishing a potential for growth in adjacent areas.

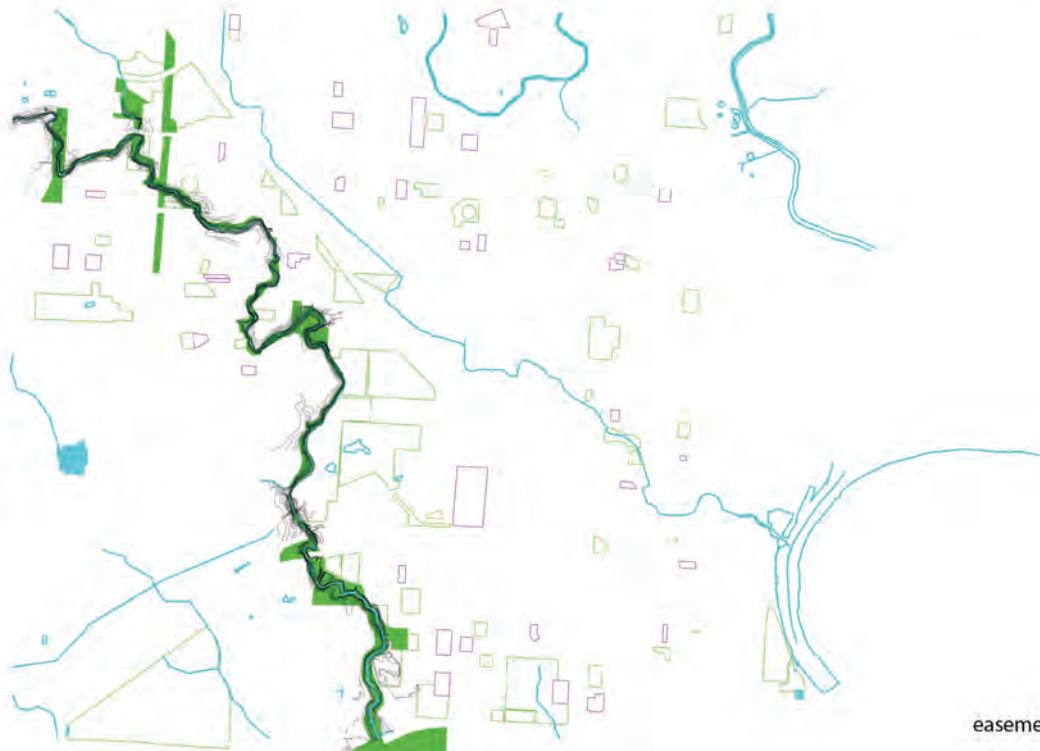
project description extracted from Perkins + Will, (web link: <http://www.perkinswill.com/work/atlanta-beltline.html>) as well as Atlanta Beltline (web link: <http://beltline.org/>)



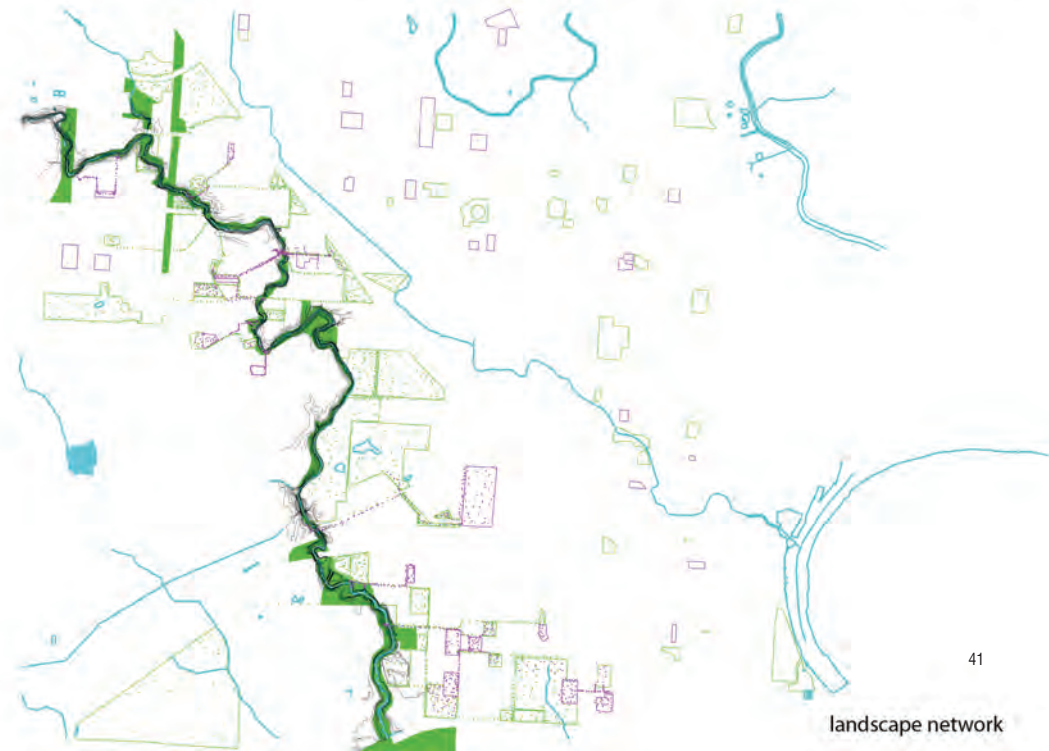
kororoit creek



toxic sites, park and recreation, public use

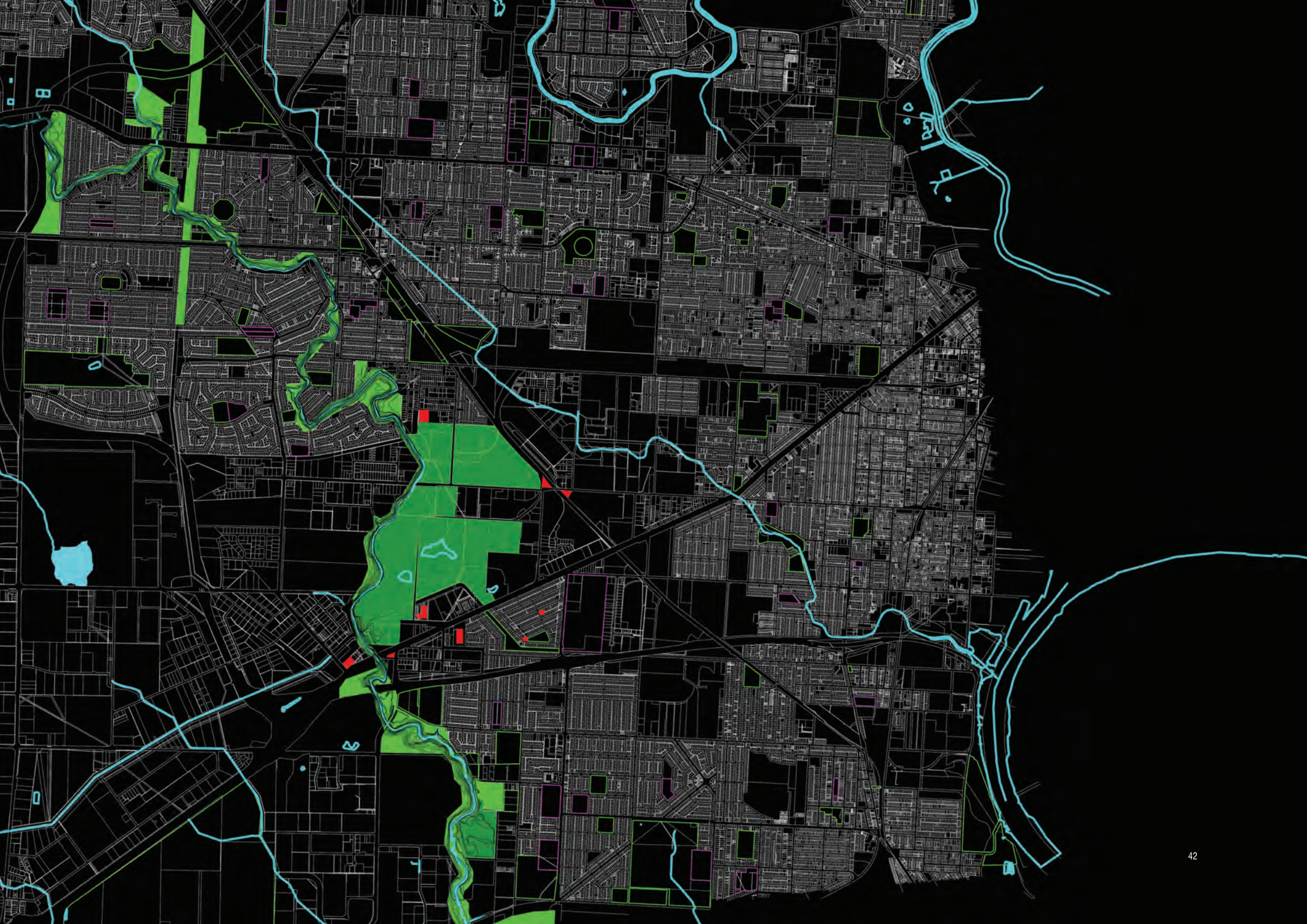


easements



landscape network







43

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### Scenario: housing - landscape

Prior to populating the area with housing developments, the project traced the environmental systems of Kororoit Creek, an ecologically sensitive waterway. The research covered toxic post-industrial sites, public land, parks and recreation as well as easements. This informed a broader network of spaces that ultimately read as an infrastructure of landscape elements that start to connect varying scales of public and recreational space to residential sites. These spaces then determined areas suitable for housing developments and intensification. In addition to industrial land, large land parcels are sites used for waste disposal and landfill. Through bio-remediative processes, the toxicity of the land is balanced and neutralised.

The Huntsman Chemicals site retains industrial activity through new types of program, where other sections attach to the green belt. Programming housing within the industrial suburb of Sunshine is intended to influence green spaces by supplying a new user group and amenity provisions for a new residential population. The scenario is phased over time; a critical factor when negotiating landscape systems, especially in the case of transforming contaminated materials. As these processes approach completion, housing projects commence.

The proposal focuses on a typology of medium-rise development with a relatively minor building footprint. One location is developed here in detail along Somerville Road, between the Huntsman Chemicals site and the Australian Wool Handlers premises, on a piece of land bisected by rail infrastructure. The decision to immerse housing projects within this context was driven

by an understanding that sought to make residential projects integral to the burgeoning urbanism in the area of study. This avoids isolation of residential neighbourhoods, a common master plan strategy that often results in ghettoisation or enclaves. The open space requirements are fulfilled by recreational activities as well as necessary residential services such as day-care facilities and preschools. The subsequent phases of this project considers the addition of additional new housing as a means to establish the residential community, and follows the development of amenities that service the residential as well as industrial land users.

The landscape strategy identifies the ecological systems of the region and the critical need for intervention. The project utilises a broad landscape vision plan to create new uses and introduce new user groups to the landscape and ultimately create amenity and housing possibilities.

Placing a tall residential tower within the low-slung horizontal landscape in Sunshine is dissimilar to placing one in area packed with high-rise structures. In addition to being an alternative typology it initiates a new relationship with the surrounding: punctuating a flat landscape with storage warehouses, and now large corridors (Kororoit Creek) of recreational green space.

The remediated landscape and its potential are further expanded upon in the section 'distribution - disassembly'.

42: contextual plan, landscape as infrastructure, with potential locations for housing projects (red), sunshine, melbourne

43: salgueiros social housing, ava architects, porto  
image source: ava architects

44: social housing block, beckmann n'theppe architects, paris  
image source: beckmann n'theppe architects

45: carabanchel housing, foreign office architects, madrid  
image source: foreign office architects

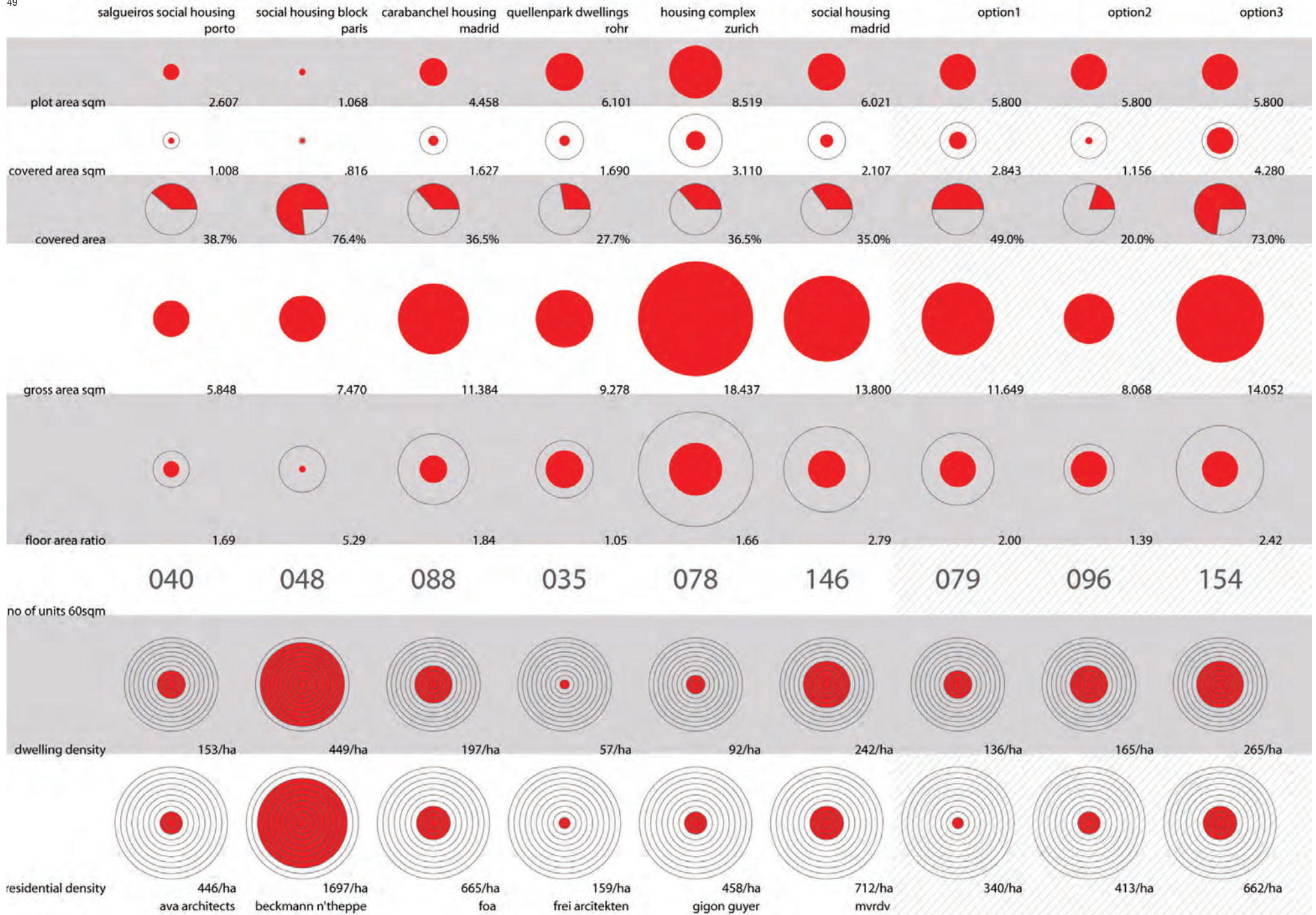
46: quellenpark dwellings, frei arcitekten, rohr  
image source: frei arcitekten

47: housing complex, gigon guyer, zurich  
image source: gigon guyer

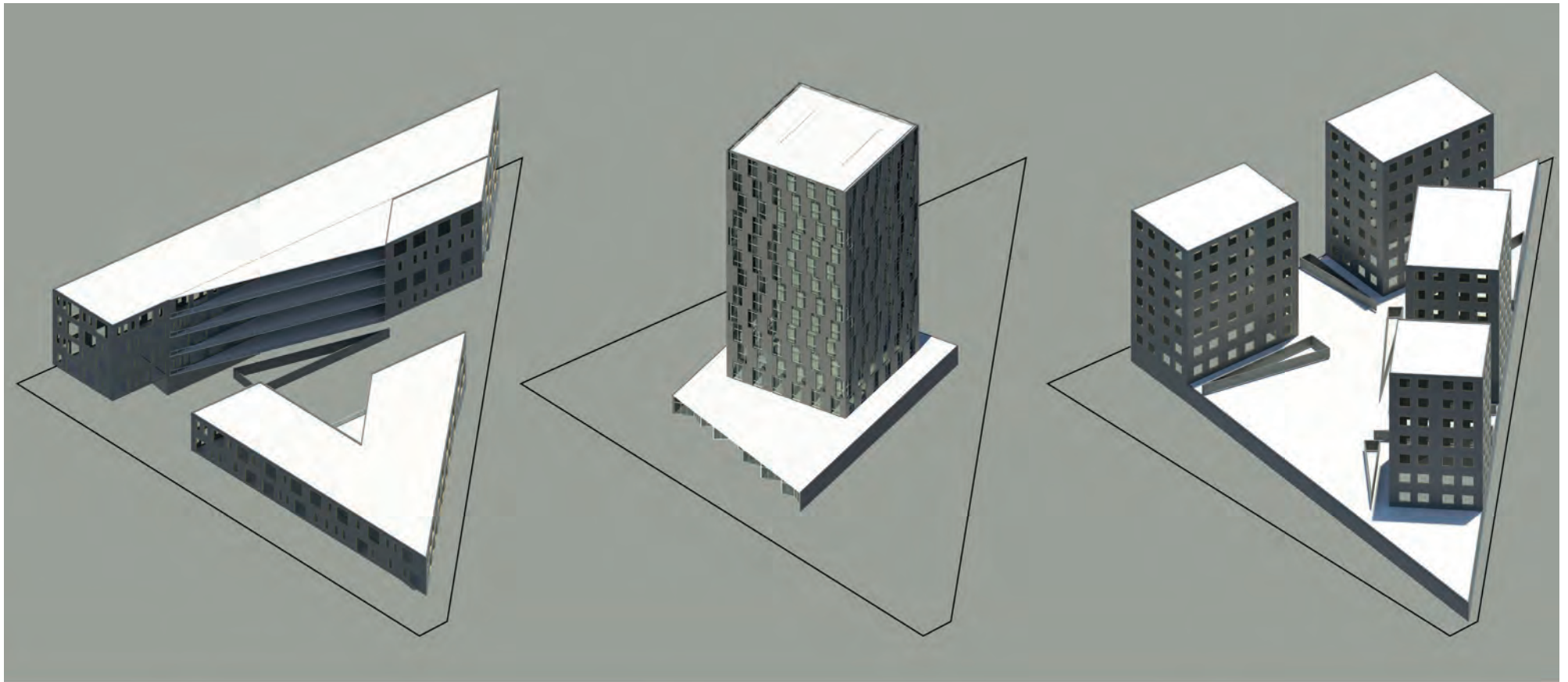
48: social housing, mvrdr, madrid  
image source: mvrdr

49: data visualisation of a comparative study of housing typologies, alongside three options to be tested at sunshine  
data source: density series, a+t architecture publishers

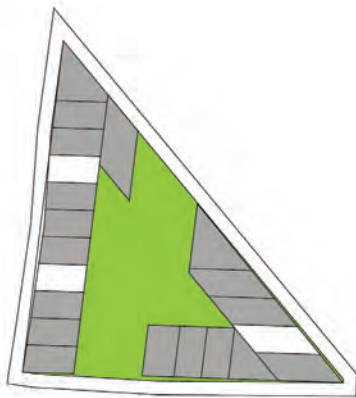
50: tests for housing typologies at sunshine



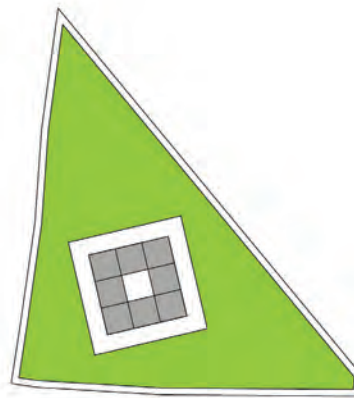




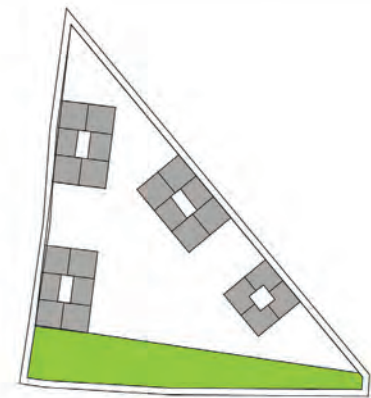
125



option1

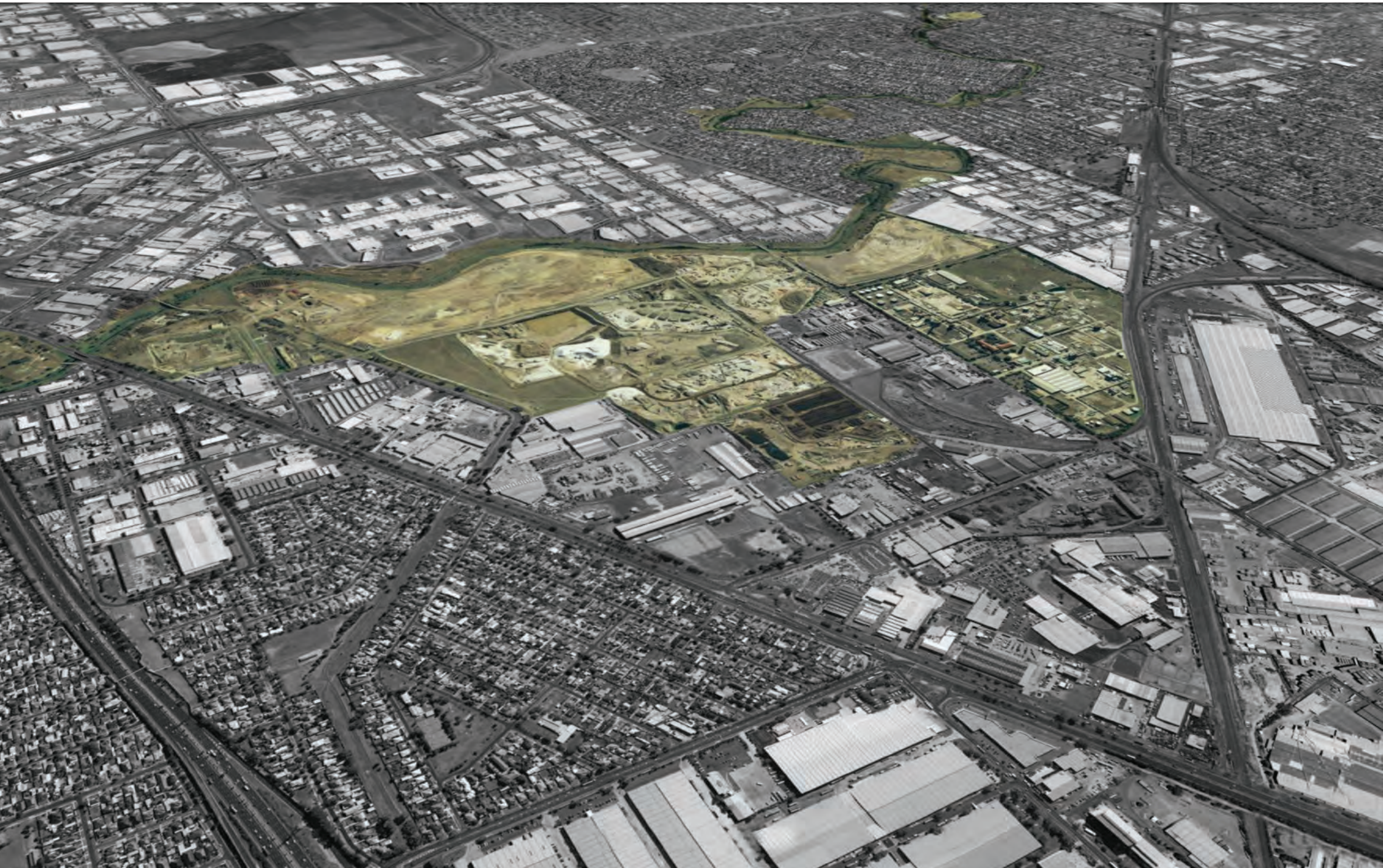


option2

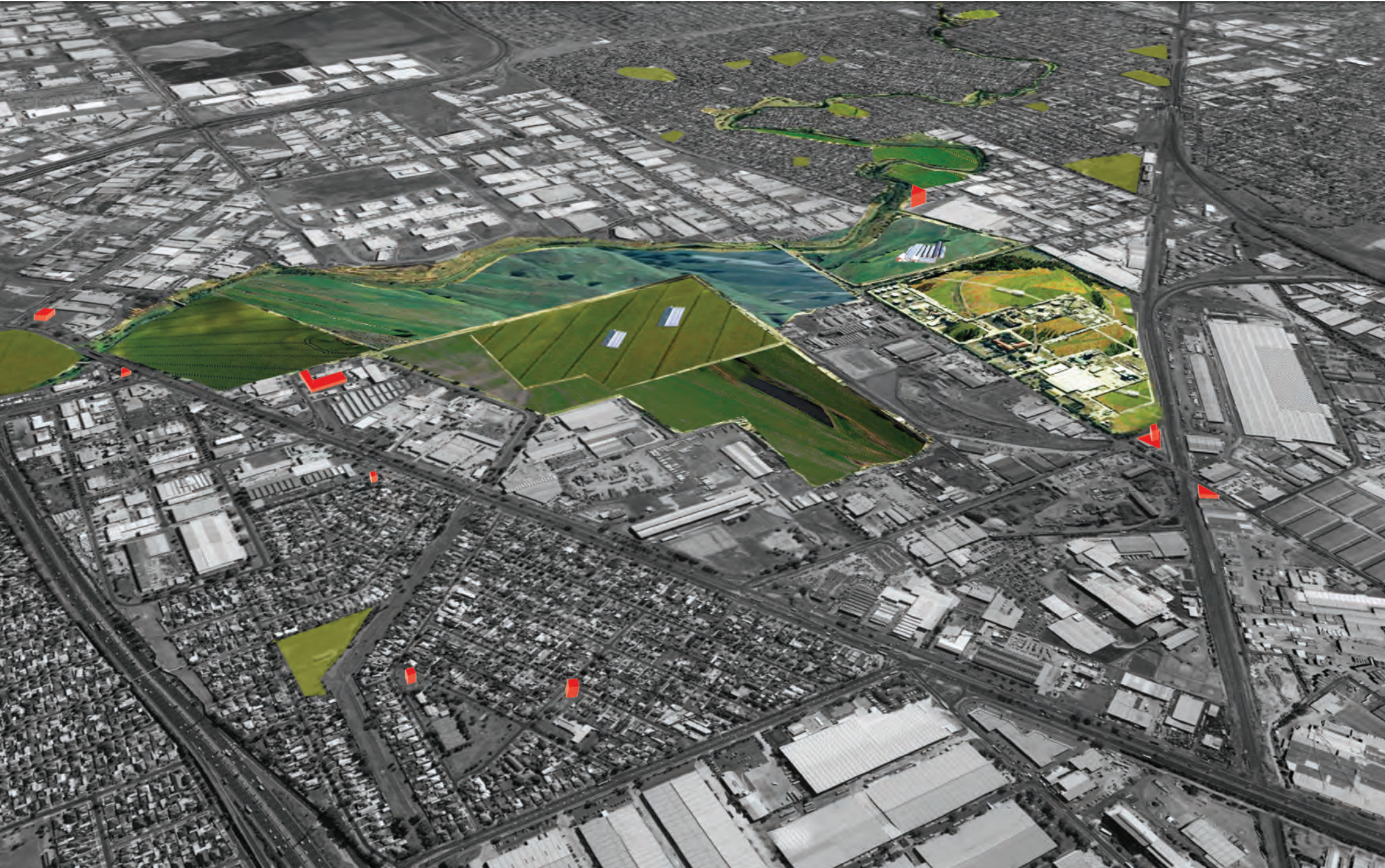


option3











31: aerial perspective of sunshine (existing), highlighting post-industrial land and environmentally sensitive landfill sites

32: aerial perspective of sunshine in a phase of remediation of toxic sites and insertions of residential communities

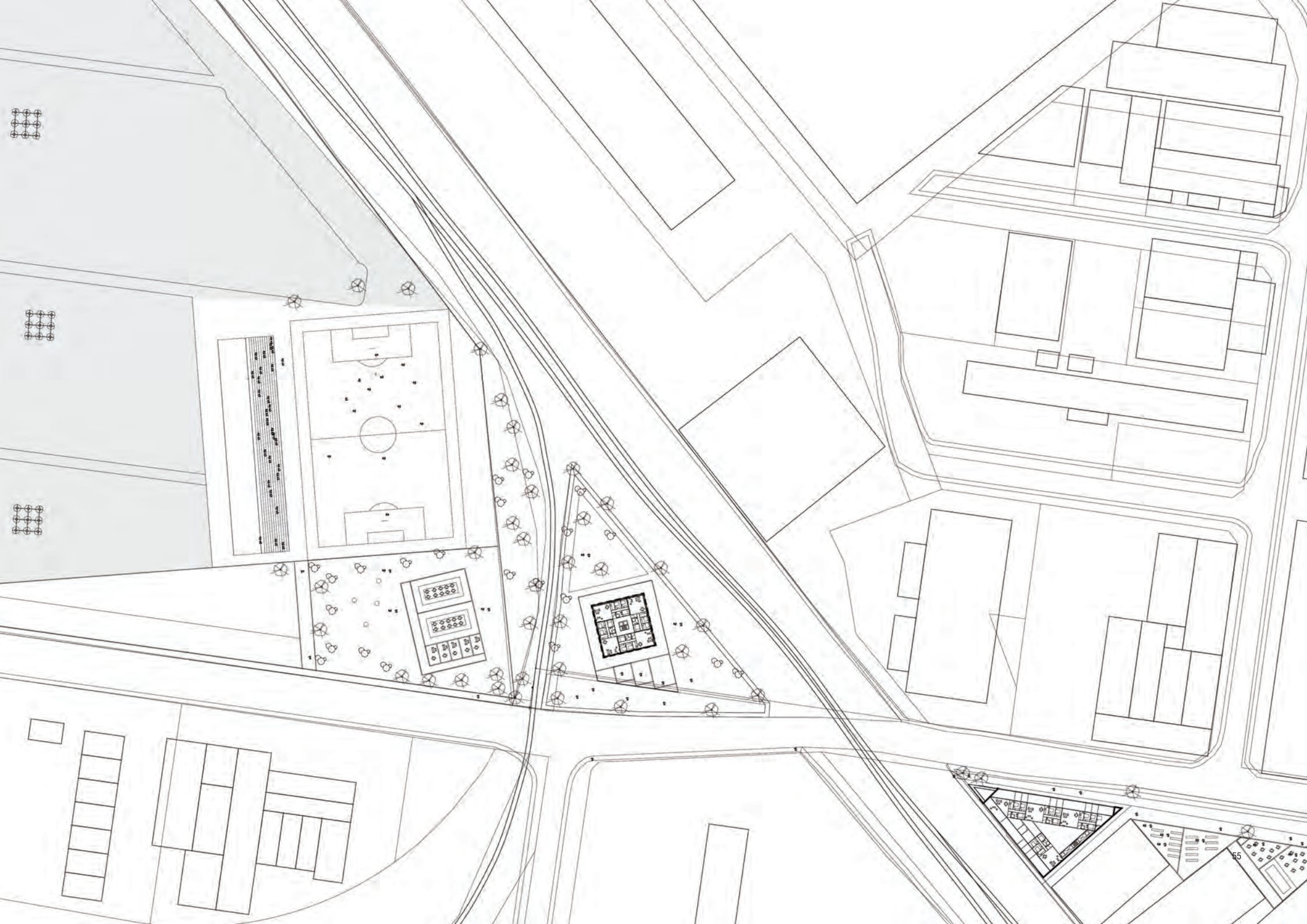
55: phase3: once a neighbourhood starts growing, with access to recreation spaces and amenities, it increases the probability of more residential structures being proposed, and this phase looks at a typology that includes residences as well as retail spaces in sunshine



53: phase1: area under consideration for housing community, brownfield remediation of huntsman chemicals site commences



54: phase2: remediation continues as residences are added to the landscape, and sites having completed the remediative cycle are made available for public and recreation program, integrating post-industrial land with new neighbourhoods, retail, cafe and other amenities emerge in the vicinity of new development







56-58: perspective along somerville road, sunshine: visual representation of insertion of new residences followed by the connection for residents via public transport as well as cycle paths











61



62



133



134 63



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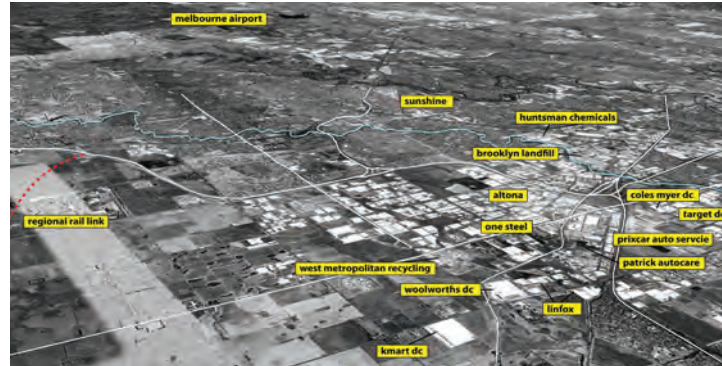








**DISTRIBUTION : DISASSEMBLY**



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### Introduction

Industrialisation is characterised by a relentless pursuit of more in the context of the immediate. From an urban perspective, this often resulted in overinvestment that has left post-industrial dross, a residue of industrial ambition. These scenarios in turn provide ideal conditions and sites for a temporal urbanism.

The release of a large 415,000 sqm land parcel, at the former Huntsman Chemicals site, introduced a new dynamic in an already variable landscape. The site is envisioned with the potential to include various industries and hence be converted into a vibrant epicentre of employment opportunities.

'Aerotropolis'<sup>8</sup> argues that airports will be central in the conceptualisation of new cities in the near future, and the urban form will be directed by the infrastructures and economies of the airport. Where Rem Koolhaas's 'Generic City'<sup>9</sup> described an urban condition of cities that are seemingly everywhere and nowhere all at once, the concept of Aerotropolis will impose a hierarchy of needs on cities so that they openly and honestly express their true purpose: creating work for their inhabitants and competitiveness for their inhabitants.<sup>10</sup> While this condition describes an extreme context of tabula rasa developments, the concept is also rooted in less ambitious urban phenomena that are intriguing, and Aerotropolis merely stretches them to a logical conclusion.

8 Kasrada J., Lindsay G., Aerotropolis: The Way We'll Live Next, Farrar, Straus and Giroux, 2011

9 Koolhaas R., The Generic City (appears in) Koolhaas R., Mau B., Werleemann H., S, M, L, XL, Monacelli Press, 1995 p1238-1264

10 Kasrada J., Lindsay G., Aerotropolis: The Way We'll Live Next, Farrar, Straus and Giroux, 2011, p19

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Fred Smith opened his company Federal Express for business in a hangar at Memphis International, stating 'aerial geography': sitting at the centre of the delta making Memphis a nexus for exchange,<sup>11</sup> as the prime reason for choice of location. UPS landed in Louisville,<sup>12</sup> (the opposite corner of a trapezoid between Memphis, Champagne, Daytona and Chattanooga)<sup>13</sup> a few years later. Memphis and Louisville are examples of rust-belt river trading towns (cotton and tobacco respectively) that, between the 1970s and '80s were willed into being by the sheer economic forces of FedEx and UPS and reborn as company towns.<sup>14</sup> Sunshine has a similar series of economic drivers and pivotal geographic location in Melbourne's west, as well as logistic and infrastructure networks that operate between the seaport and airport.

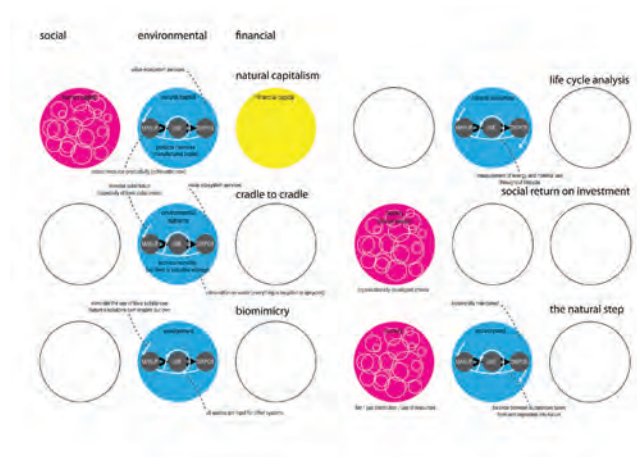
In a post-industrial scenario, the site offers a great potential to speculate about new industrial occupancy. Recycling and scrap yards are economies that emerge from practices that prevent waste of materials with a possible further use. However as a consideration into industrial futures, entire product chains and lifecycles need to be better understood. Through this understanding, strategies that reduce energy and material impacts can be implemented. This research also studied the trajectories of long term industrial and product cycles and lifecycle analysis. These ideas draw heavily on approaches like 'cradle to cradle', 'bio-mimicry' for social, financial and environmental aspects

11 Kasrada J., Lindsay G., Aerotropolis: The Way We'll Live Next, Farrar, Straus and Giroux, 2011, p61

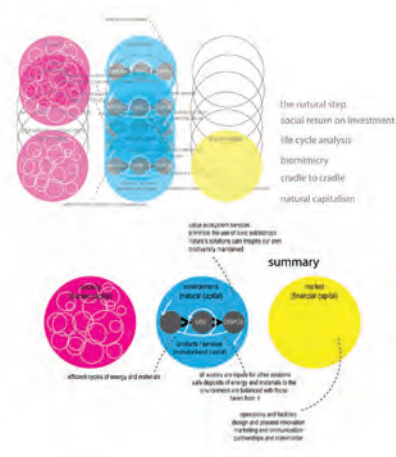
12 Kasrada J., Lindsay G., Aerotropolis: The Way We'll Live Next, Farrar, Straus and Giroux, 2011, p63

13 Kasrada J., Lindsay G., Aerotropolis: The Way We'll Live Next, Farrar, Straus and Giroux, 2011, p61

14 Sourced from an interview 'Aerotropolis' Manauha G., interviews Greg Lindsay (web link: <http://m.ammoth.us/blog/2011/03/aerotropolis/>) accessed on January 23, 2012



67: approaches to sustainable industrial practices, organised as social, environmental and financial aspects  
data source: Sheddoff, 2009



68: the juxtaposition of sustainable frameworks, building a summary framework  
data source: Sheddoff, 2009



69: geographic representation of product cycles between storage of new products in warehouses and subsequent disposal at landfill sites, suggesting the potential for the post-industrial site to contribute materials and products back into the cycle



70: fun palace, an unrealised project for east london, cedric price  
image source: Design Museum

71: site elevation, initial architectural expression of staging grounds

72: site section, initial architectural expression of staging grounds and  
the intermodal terminal



71

of production and consumption. (refer fig.67, fig.68 p139) This is broadly considered to be the design process for 'disassembly', where every material and process is accounted for initially such that it can easily be reused, recycled or disassembled when the original purpose is exhausted.

### Huntsman Chemicals Site

Geographically the Huntsman Chemicals site sits between the production / storage centres on one side and landfill sites on the other: a point at which entire life cycles of products can be re-routed to more sustainable practices like disassembly (adding materials back into the system) and up-cycling, which instead of reconstituting materials into elemental stages they are converted into products of greater significance and higher environmental value. (refer fig.69 p139) This program is looked at as one possibility that could benefit from the intermodal freight terminal, multiple logistics operators and logistics centres sprinkled in the area and locating a form of industry that projects a future for scrap dealers in the immediate surroundings. This project is intended to be a case study to test and assess urban transformations through speculative drivers of economy. Developing this scenario supports the creation of the catalytic activity core and distribution clustering that attracts industries increasing productivity and energising social improvement.

The combination of circumstances support 'staging grounds': sites and spaces of scalable potential that can accommodate transition. The initial architectural expression reflects fantastical and fictional devices, drawing on precedents such as the work of Cedric Price and China Mieville's scrap yards to speculate about occupying very large industrial sites. (refer fig.71, fig.72 p140)



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### Narrative scenario

'The sterile chemical site collects itself into giant tentacular gantries that haul and elevate amorphous bulk delivered at its extremity, a species of vast intelligence and cognitive ability, with the sole drive of dismembering mass into fundamental forms, stacking, shelving and sorting, while an army of lesser beings regroup before launching the entire organism into a countdown, initiating sequential protocols that analyse the system prior to it reappropriating and up cycling nascent material into complex devices of efficient intent'

(These concepts were later re-scaled to incorporate the temporality and phasing of the overall scheme)

### Proposition

Supply chain management and logistics management aim to operate at high levels of efficiency at every step to ensure timely deliveries and maximised profits. Infrastructure needs to be understood as an integral part of the environment as the system is measured by how rapidly and effectively it can deliver.

Infrastructure networks as organising lines will grow more prominent as cities continue to expand and densify as mega-regions. Using large grain attractors, products and services to integrate the industrial and services sector, the hybrid network will transform the local and regional presence of this area.

This network will maximise the potential of road, regional rail and connections to the airport. This new identity will bring a broader set of constraints and

73

### Schiphol Logistics Park, (Schiphol, Netherlands)

OMA's area development study for value-added logistics facilities contends with the future of Schiphol Airport in the context of logistics and the 'unconditional freedom' that stems from locating projects outside the traditional city.

The project re-thinks the traditional business park as more than a range of individual, fenced premises along a minimized public access system. A new type is developed through mutual coordination between future occupants to avoid the 'ad-hoc' distribution of land.

In Sunshine, the project shares similar concepts of value-added logistics by locating companies near an intermodal terminal for financial gain and economic benefit. With Schiphol, the industrial grounds rapidly transform to showcase the premises of high tech companies. Ultimately, the landscape is transformed as production facilities, attracting offices and head quarters.

The clustering of economic activity and parallel programs has the capacity to attract a range of new urban developments.

project description extracted from OMA, (web link: <http://oma.eu/projects/1996/schiphol-logistics-park>)

74

### Duck and Cover: Thinking Out of the Big Box (Tracy, California / Phoenix, Arizona / Brooklyn, New York)

The speculative project by Roger Sherman alludes to the discourse of Robert Venturi's Learning from Las Vegas. It draw on the visual branding of Target as a study, and simultaneously defines a business plan and architectural strategy. It explores the domain of the 'big-box, stand alone' phenomena and the opportunities for the paradigm urbanistically.

Although this project follows consumer branding and a concept of the decorated shed, it applies a geographical context and aims to embed itself in the local landscape. It derives from and enhances local relations as well as micro and macro economies. The project possesses the programmatic capacity to serve as both 'bait' and 'hook'.

It is an approach that draws a new audience, cleverly purporting to hide the big box in plain sight. Duck and Cover reinterprets the 'urban core' in light of the new economic calculus, growing neighbourhoods and the frictions with big-box retail.

project description extracted Roger Sherman Architecture and Urban Design (web link: <http://www.rsaud.com/>) additionally, Roger Sherman Architecture and Urban Design, Kochanowski G., Duck and Cover: Thinking Out of the Big Box, project published in Cuff D., Sherman R., Fast-Forward Urbanism, Rethinking Architecture's Engagement with the City, Princeton Architectural Press, 2011

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73: aerial view, schiphol logistics park, schiphol, netherlands  
image source: oma

74: aerial view, targetplay, brooklyn, new york  
image source: roger sherman architecture and urban design

75: target nation  
image source: roger sherman architecture and urban design

76: target(ed) communities  
image source: roger sherman architecture and urban design

potentials, and part of the research focuses on prospect of vacancies of large sites and built environment, and the riffs that develop as a result.

Locating an industrial building within reach of associated businesses and customers will also have long term advantages. The increasing popularity of business parks, the positive effect they have on the lifestyle of business workers, sharing of social and common facilities, banks, child care facilities and proximity to essential services is one such example.<sup>15</sup>

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<sup>15</sup> sourced from Architectus, Newsletter: Infrastructure May 2009 (web link: <http://www.architectus.com.au/newsletters/Architectus-newsletter-2009-05-Infrastructure.pdf>) accessed on December 22, 2011

### **Scenario: distribution - disassembly**

The third segment of the Sunshine project speculates possible futures of the Huntsman Chemicals site (currently in a state of remediation owing to the termination of industrial activity of the Huntsman group in Sunshine) and the potentials of its immediate local neighbourhoods.

When economic generators attain a great enough magnitude of operation, programs within proximity become activated. That is to say, the economic activity of the industrial site attracts new programs, people and the services required to sustain them. In this proposal, the urbanism that sprouts from such attractors is flexible and adaptive, programmatically and spatially. They have gravity, with the capacity to affect and intensify the urban fabric around themselves.

This proposition utilises the concept of disassembly and distribution as a case study to incorporate alternative industrial futures and explore expanding physical territories of the intermodal delivery system. The project utilises rail and road surface delivery models condensed within an existing logistics hub along Somerville Road. The project operates at many scales, ranging from post-industrial occupancy of large industrial sites to the speculative location of local supply chain management sites, ultimately creating a 'Central Logistical District' (CLD): a new urban type characterised by density of logistical and industrial functions and intensity of economies of scale.

The Huntsman Chemicals site is adjacent to the Australian Wool Handlers (AWH) premises, which is a super-scale big box over 570 m in length and a



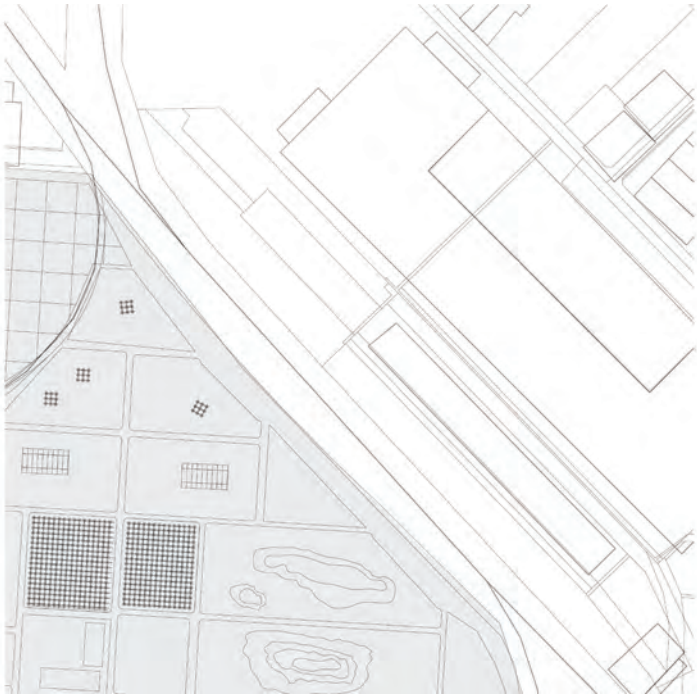
ground footprint of 100,000 sqm, incorporating auction facilities, trading and storage areas. The project positions this structure to absorb high volume of transfers and is open to less-planned even unpredictable appropriations.

The development for AWH looked at the possibility of leasing premises for products other than wool, activating space through reallocation. The post-industrial Huntsman Chemicals site while completing brownfield remediation initiates a fresh form of industry, one that employs small scale operators that disassemble products and reappropriate them into products of higher marketable and environmental value, known as 'up-cycling'. The scheme is designed to grow through incremental stages of development.

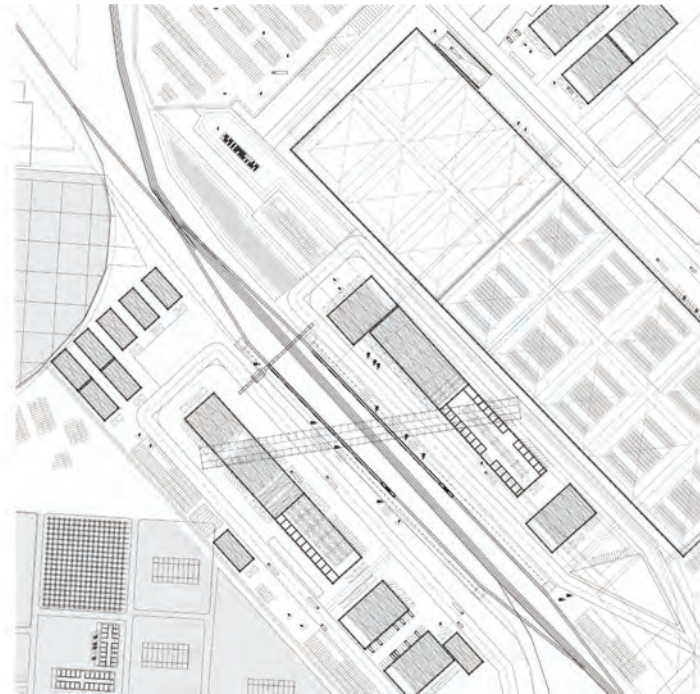
### **Proposition**

With site clearances underway, the area along the railway line begins to expand, with intensification of the rail network and a terminal building for intermodal operations and warehousing facilities. Almost simultaneously, the chemical site is divided into smaller-grain entities to trigger an incremental process of development. Service blocks step in at different stages of a product cycle, from lifecycle research to disassembly, reassemblies, research and finally recycling. The intermodal terminal extending in Melbourne's west (Laverton and Altona) will grow more rapidly. The amalgamation of industrial production and logistics operations share operational infrastructure. The sharing occurs through loading bays and container terminals, service providers, and infrastructures such as gantry cranes and forklifts. The economic potential can be maximised through elimination of redundant steps in various but related supply chain.

79: phase3: while the intermodal terminal gathers an intensity of operation, the remediated chemical site is occupied by operations of disassembly at varying scales of activity and at different phases of the product cycle, the terminal and industry share infrastructure and warehouses / container terminals, the density of exchange activates warehouses in the area



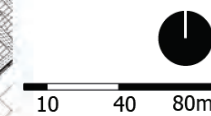
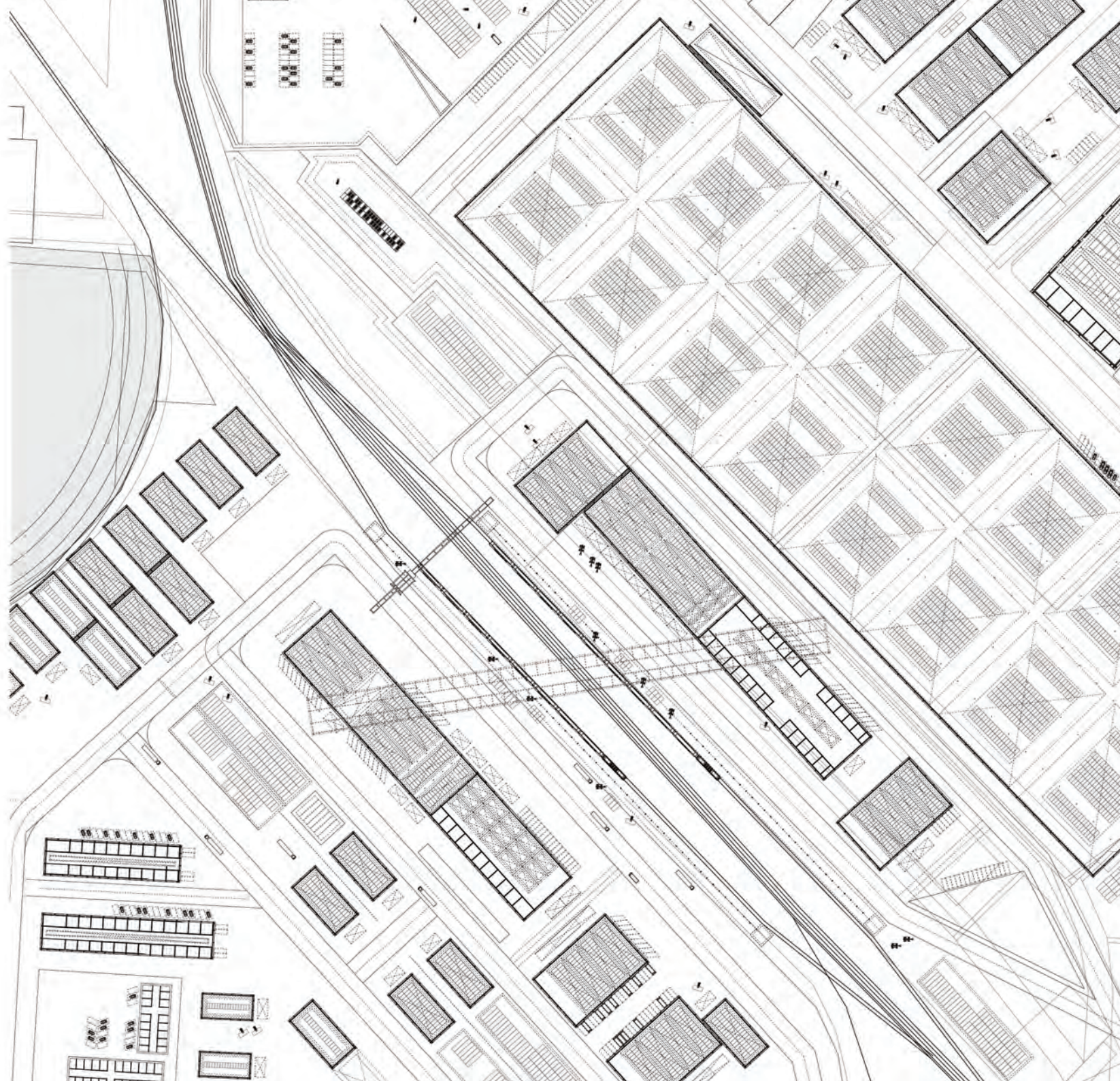
77: phase1: the huntsman chemicals site undergoing brownfield remediation, while maintaining existing internal plot boundaries to manage and test various forms of remediation



78: phase2: remediation processes continue, as the intermodal terminal develops along the railway line, and locations within the huntsman chemicals site that have completed the remediation process develop warehousing facilities and container terminals, the AWH begin to lease their premises and provide flexible storage space











stage1



stage2



stage3







80: site section through the huntsman chemicals site over phases of remediation and development of intermodal terminal and industry of disassembly

81: perspective of the intermodal terminal from railway line, loading and docking areas

148 82



83





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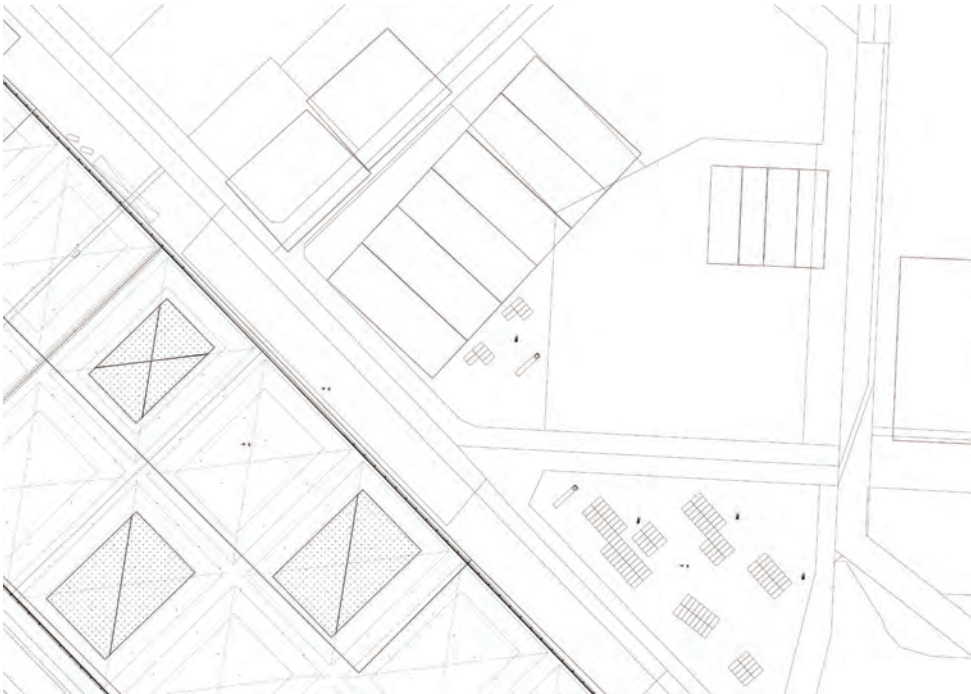
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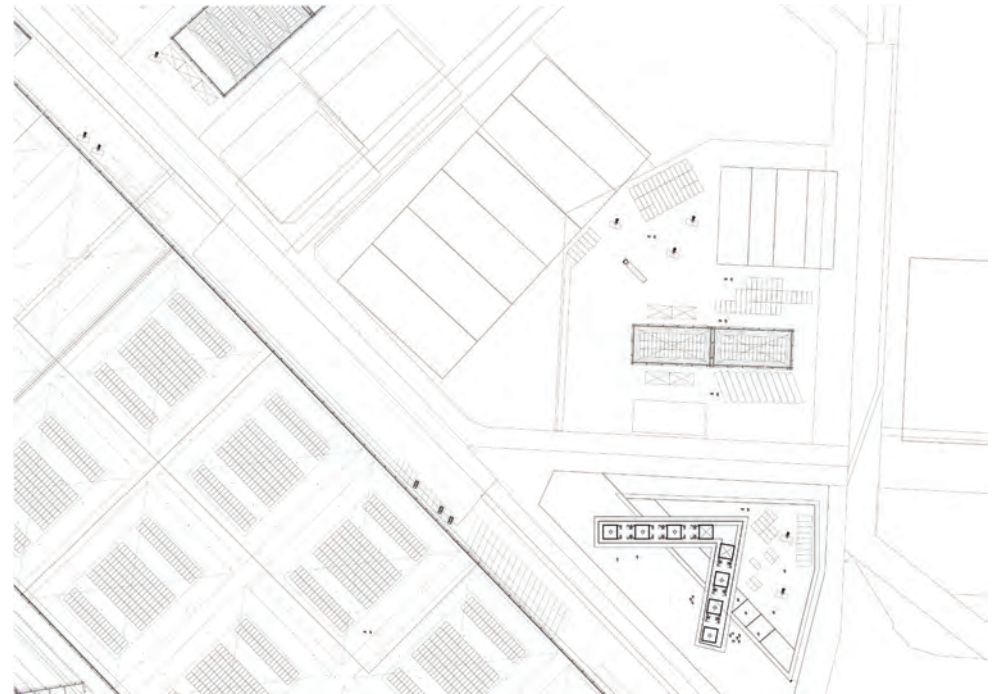
149

88: phase3: the clustering of activity will reflect in the activation of warehousing facilities in the area and the amalgamation of land titles of warehouses and logistical centres to support activities of the intermodal terminal and local industry

150

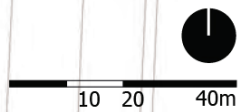
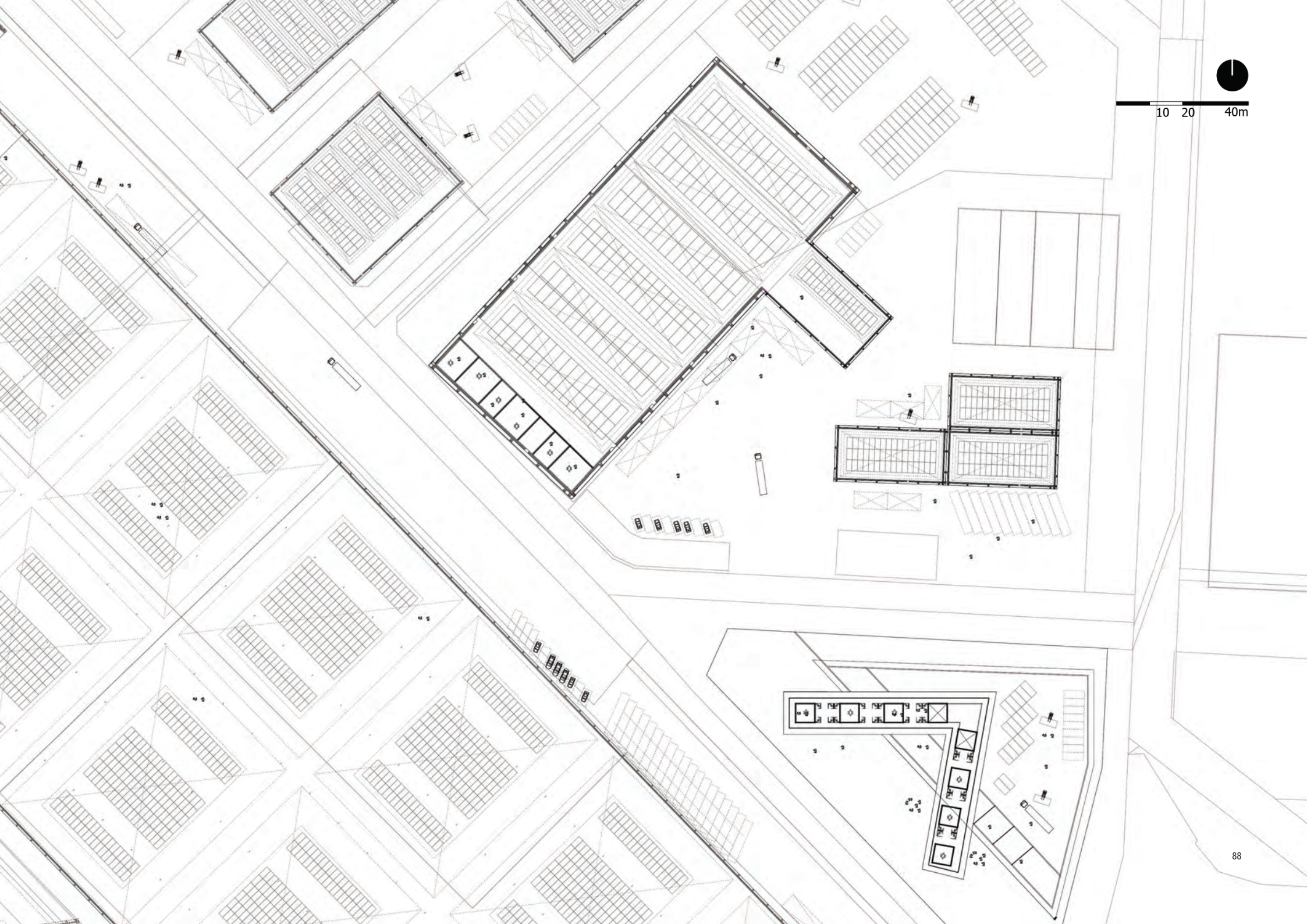


86: phase1: focusses on the development along frederick street, in conjunction with the awh premises, and the transformation through leasing parts of it's premises as intermodal operations and storage requirements grow in the area



87: phase2: explores the insertion of supply chain management head office in sunshine and the development of a logistical-cbd









stage1



stage2



stage3





89: site section through frederick street, illustrating the phases of development between awn and the logistical centres and warehouses

90: perspective along frederick street, supply chain management building, juxtaposed with loading operations and public amenity, nurturing a peculiar urbanism

154 91



92





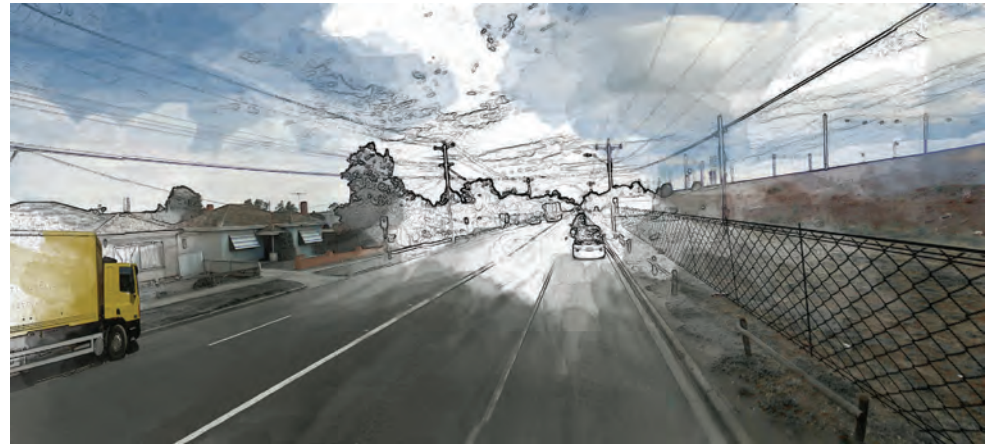
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99: aerial view, logistical and industrial neighbourhood

100: aerial view, Sunshine in the context of metropolitan Melbourne

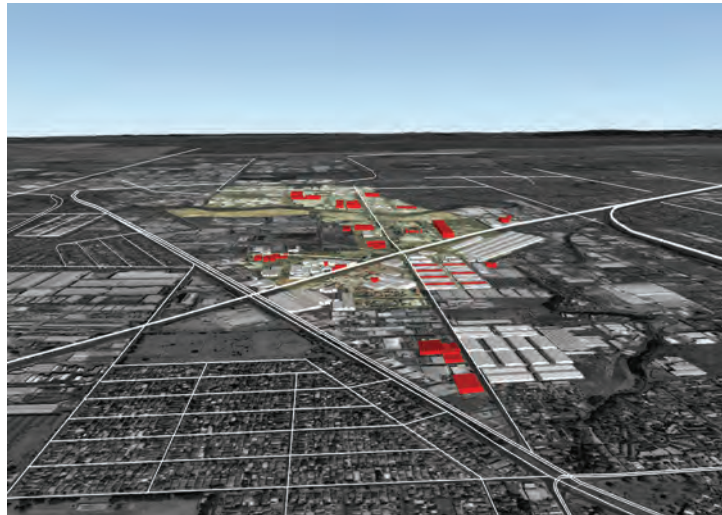
101: aerial view, intensity of industry and logistics and the intermodal terminal

102: aerial view, Sunshine and regional Victoria

The geographic concentration of logistic services and an intermodal terminal will accelerate the movement of operators. A competitive drive will encourage the relocation of the primary metropolitan supply chains from CBD locations to Sunshine.

This collective form instigates new urban types and locations for high-rise developments, including supply chain management (associated with the CBD) in Sunshine. The urbanism that this move generates is less diffused, and builds a scenario where operational areas overlap with financial management and executive functions.

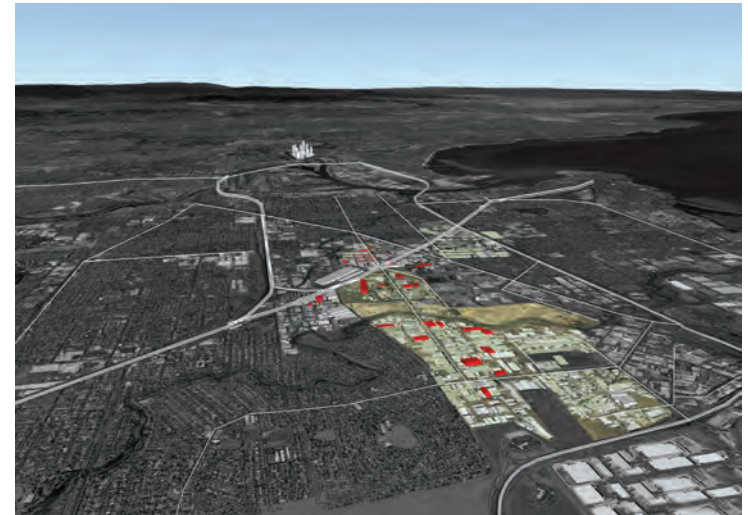
99



The significance of this relocation will manifest itself in the amalgamation of warehouses, a changing urban grain as some property titles are connected together in an ambitious re-scaling and diversification of services brought about by the stimulation of growing activity.

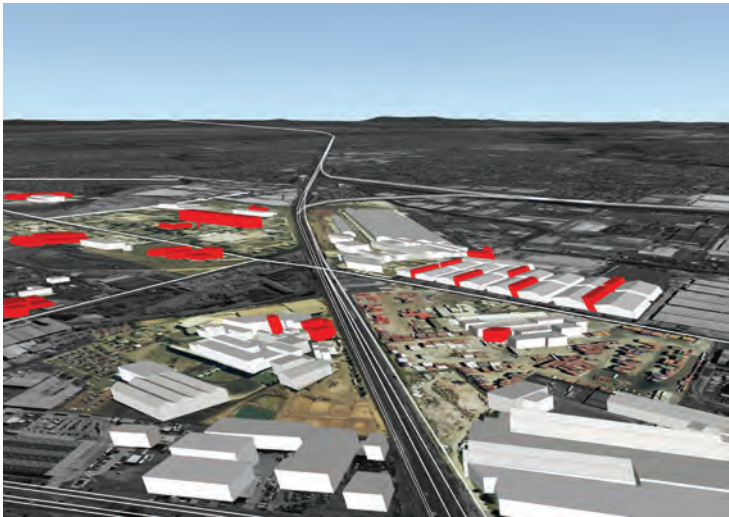
The project extends to Sunshine Road in the later phase to develop a second terminal along the extension of the Footscray rail link near Tottenham with an additional handling capacity.

100

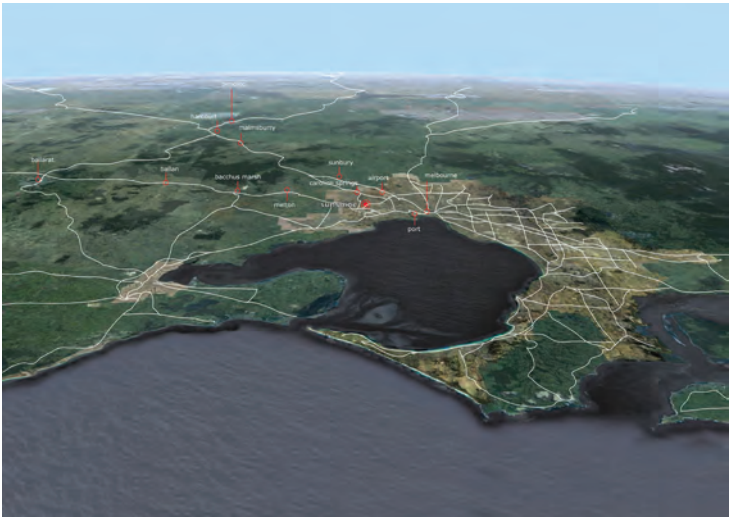


Where the operational areas of the Central Logistical District are clearly established as part of the project and their development defined specifically, the innovation centres and financial institutions that emerge from this consolidation is hypothesised at a particular retail and residential density.

101



102

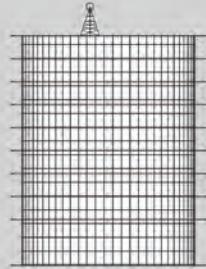


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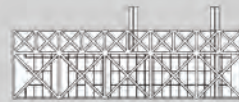
103: visual index of building type and function of the logistical-CBD  
104: composite aerial view of scenarios and transformations developing simultaneously  
105: aerial view and legend of urban transformations



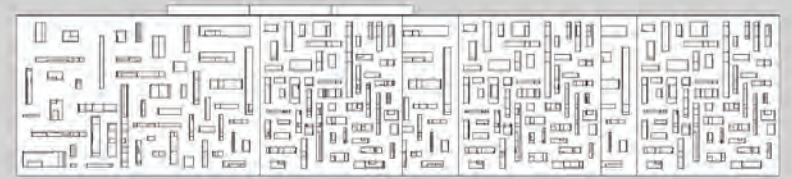
residential



supply chain



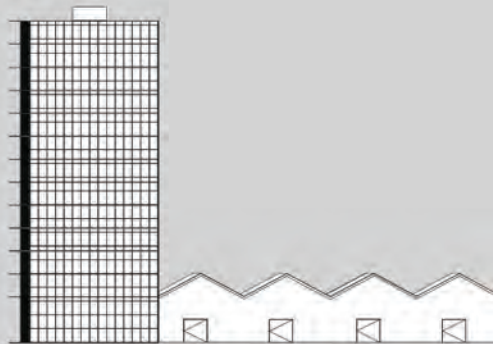
pre-school, day care



warehouse, e-commerce



commercial office space



logistical operations

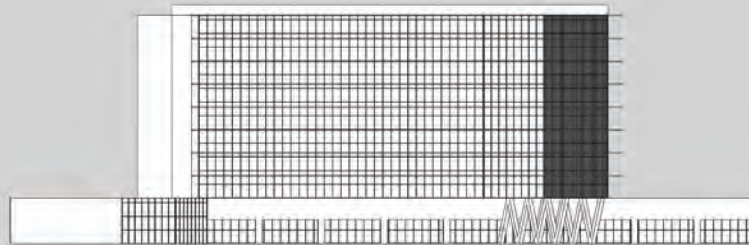


supply chain

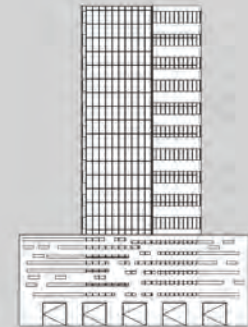




warehouse



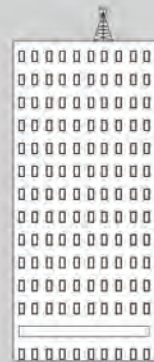
supply chain management, logistical operations



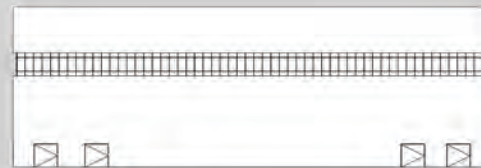
commercial office space, warehouse



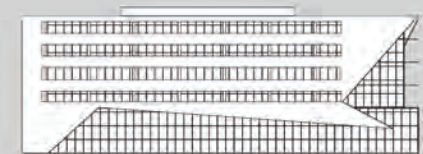
residential



supply chain



disassembly



residential, retail









terminal2 is developed to better manage the volume of intermodal freight in sunshine, rapidly modifying the urbanism with an intensity of exchange

transformations through amalgamation of property lines between warehouses and upgrading of storage facilities

the logistical cbd for distribution, industry and logistics is developed through intensity of activity within networks of distribution

supply chain management and logistics head quarters

phased development of the intermodal terminal and staging grounds for disassembly, re-organising industry and logistics

retail opportunities and amenities within residential and industrial areas

post-industrial land as recreational areas and pre-schools for new neighbourhoods

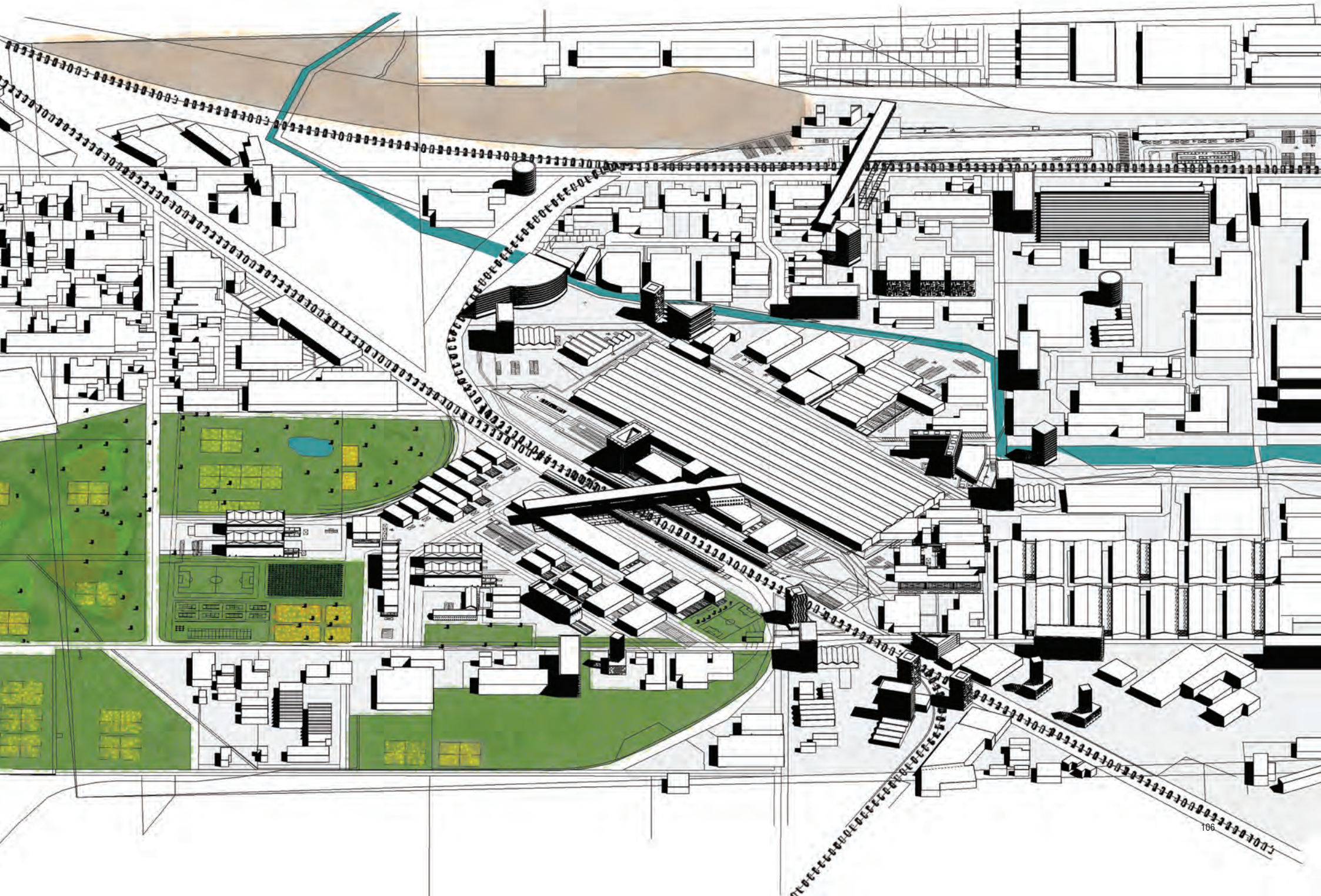
urban landscape altered through addition of residential neighbourhoods

new storage paradigm as digital storage is added to physical storage, evolving a new urbanism that stems from overlapping activity fields and sharing of infrastructures

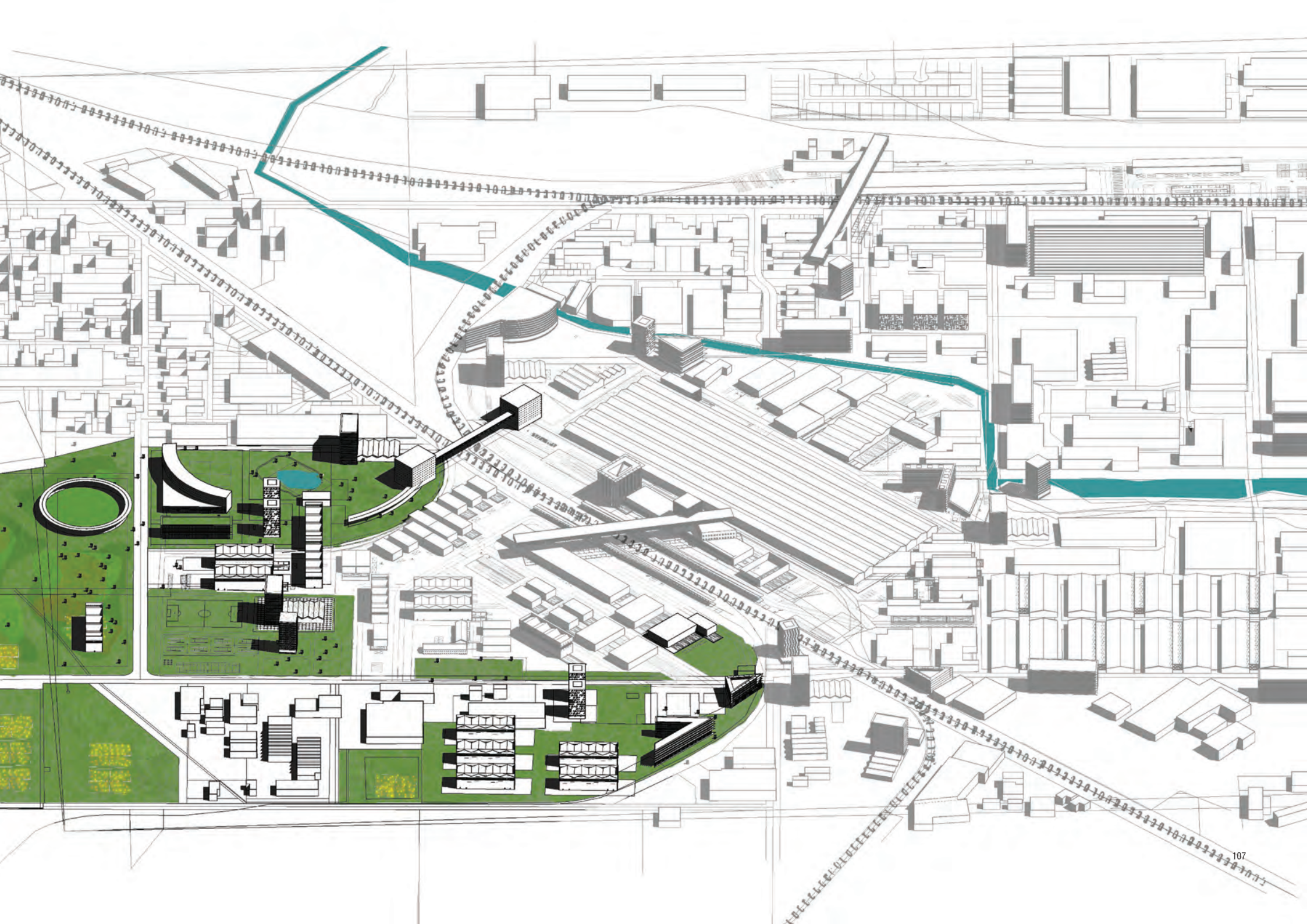
reappropriation of industrial buffers and easements for outdoor work areas and gathering spaces

remediation of toxic post-industrial land for public recreational use









106: aerial view, scenarios for projected intensification of logistical CBD  
time frame: 10-15 years

107: aerial view, scenarios for transformation of remediated landscape  
time frame: 15-20 years

### Summary

Scenario City develops post-industrial land in Sunshine and the logistic hubs in the neighbourhood. Its urbanism is defined through the speculative interactions of industrial activities, logistics and the residential occupation of the site. As three scenarios unfold, an urbanism emerges through a combination of opportunity and efficiency.

The project takes an approach of layering new function accommodated in existing buildings and addition of new structures in and around existing industry, ultimately framing Sunshine in a metropolitan and regional context.

Each scenario creates a relationship of new activities and user groups. The research highlights the opportunity of these new urban relationships and the temporality of both program and the dynamic quality of time. Scenarios builds into them an understanding that transformations will not occur at the same pace, and the dimension of 'time' is central to its ability to integrate within the existing landscape and provoke interactions between activities.

The importance of the project lies in the coexistence of user groups and unprecedented change that characterise the collective form. Additions and subtractions accelerate the rate of change. The alterations that occur in this environment are an outcome of the networks these systems feed into.

Rather than predetermine the extent of development and interrelation between each scenario, the proposal accommodates the different ways through which they may occur by 'loading' the site with new forms of activity, each with its

own logic. These juxtapositions establish a composite urbanism that in turn, leads to new relationships between infrastructure, landscape and residential occupation.

### CBD - CAD - CLD

The Central Business District (CBD) is the commercial and financial epicentre of the city. Traditionally zoned as an area with a density much higher than the rest of the city, CBDs very often have planning and building regulations that define spaces and activities. Residential accommodation not traditionally associated with the CBD is now being addressed more seriously. Through activities (like arts precincts and sports precincts) that graft on, CBDs now have a more cultural image. Central Activities Districts grew out of the concern that horizontal expansion of the city was making the task of moving a growing population from residential areas to employment areas an extremely inefficient process; both in terms of time and the financial costs. CADs focussed on cross programming, public transportation and compressing multiple activities within proximity to high growth residential suburbs. The polycentric Melbourne was about learning from the inefficiencies of a single CBD.

The Central Logistical District (CLD) however, is new urban form that is activated by building on the intensity of logistical and storage operations. It is an employment core located away from the CBD and CAD but defined by how it connects to them. The CLD is envisioned as a area of intensity that accounts for various point within a supply chain and the necessary programs that accompany logistics.



The systematic relocation of industrial activity from metropolitan areas can be curbed through localisation of specific industries. Localisation refers to activities and business that group together within an area as a support mechanism for a larger local industry. Disassembly is a case study of an industry that can benefit from the networks of distribution as well as present a future for recycling. Data centres in Sunshine is an initiative at speculating about the logistics of information along with prospects for e-commerce, technology and hence industry. The landscape strategy organises these networked ecologies and distributes industry and housing which in turn distributes amenity.

This Central Logistical District for distribution, industry and logistics is not the outcome of a zoned master plan but a visualisation of multiple scenarios and outcomes. Underpinning this project is an understanding of the physical and operational networks that can be a medium for sustaining industry and logistical operations alongside information networks and storage, landscape ecologies, housing, amenities and recreation.

The city stands to benefit from maintaining employment and skilled labour within its own limits, especially in growth area with access to logistical networks and growing markets.

Sunshine is not a unique condition but is at a stage when there are several degrees of freedom, many variables and hence variations can be tested.

### **Architectural Expression:**

Scenario City's architecture is speculative and spatially manifests the temporal nature of these shifting urban relationships. Its character is one of abrupt and opportunistic combinations: infrastructure of industrial and logistical networks on one hand with the slower evolving and familiar forms of civic commercial and residential occupations on the other.

The proposal learns from an 'industrial pragmatic'. It is urgent and direct, derived from spatial flexibility and adaptability of the industrial site and logistics in general - attempting to maintain the possibility for looseness (organisationally) and robustness (infrastructure, building stock) at once.

Public / commercial / residential space and program (slower, smaller scale) can coexist with industrial / logistical urbanism (always changing, heavy). Each program and intervention seeding the next / other.

The overlaps produce an urbanism that is part collage, part hybrid, driven by an optimism that comes from the location and scale of the site and the dynamic context it sits within, temporary and permanent.



# CONCLUSION

COLLECTIVE FORM



The work undertaken in this thesis explores the symbiotic relationships between industry, infrastructure and logistic networks. As cities expand, so do the footprints of their connective tissue (infrastructure) and processes (logistical facilities). These functions that were once secluded from our spatial understanding of the city, are becoming more conspicuous with the rapid growth of the city. It is evident that a methodology has to evolve to incorporate these programs within proximity to employment and economic centres, failing which the cost incurred by the current model will be more than just an economic one. The projects are not about beautification, but a strategy to occupy gross urban land.

The projects followed the industrial shifts within metropolitan Melbourne. The strategy and responses vary in each case. However, the projects revolve around a similar set of principles: interventions as points in a larger network that contend with the residue of industrial ambition and commercial processes.

Beginning with the Eastlink and Dandenong, it became apparent that overlaps of new infrastructure projects and central activities districts development overlook existing industrial fabric and networks. With growing pressure for housing developments, manufacturing, production and distribution centres are being forced further away from the city, driving a range of employment opportunities away from Dandenong. The project proposes adaptation rather than replacement of existing industrial areas. The proposal illustrates integration and porosity in an industrial fabric through adding social, cultural and recreational spaces. These added activities are not traditionally associated with industry and function as concentrated points of public interaction in a network of streets that

in turn provide a new pedestrian permeability through the street network.

The project at Fishermans Bend focussed on the Port of Melbourne and its operations. The current model adopted by the port to distribute its operations carries with it the capacity to re-define the logistic networks in Melbourne and hence control where industry and logistical centres are located. The simplicity of the State Government proposal for Fishermans Bend, a re-zoning of large areas of Fishermans Bend for residential projects, transfers from one form of mono-functionality to another. Thus, clearly missing any potential and opportunities that arise from integration of new usage within and existing urban fabric. To consider those opportunities, the project re-appropriated and re-programmed industrial warehouses at Fishermans Bend, anticipating the growth of the residential population and providing educational facilities, amenities as well as recreation spaces. Additionally, reactivation of the port rail and connections to the CBD were strategies that prevent against the isolation of redevelopment projects.

The final work in Sunshine is framed on an understanding of a middle ground that has the potential to weave a new urban fabric from the programming of industrial, non-industrial, residential developments and environment together under the broader knowledge of networked ecologies. This project extends previous examples of industrial regeneration that challenge the degree to which new program and industry can exist in a post-industrial context. Scenarios for these developments are proposed, that combine spatial interaction with a potential of relationships and shared networks.

It is important to understand the networks of industry and infrastructure and the logistical support that follows, first in isolation and secondly in the context of the city. Setting up areas of intensity and exchange will continue to be a point of friction when increasing density. The projects undertaken as part of this thesis assess this complex urbanism, to evolve a dynamic planning strategy and positive friction, that can support cross programming and prescribe limits on program and architecture.

Metropolitan Melbourne and regional Victoria are at a pivotal stage in their growth as a city and region, and possess the means to curb sprawl and strategically regulate growth. Industrial areas represent 'moving targets' that respond to a multiplicity of relationships and forces. Industry and logistical networks are dynamic and complicated and excluded from the collective understanding of the city. The built fabric left behind is a massive high quality building stock.

The projects propose a dynamic strategy that can include new forms of industrial activity and the networks of distribution which relates to shared networks and spatial interventions. This clustering drives elaborate economic structures through industrial growth, information technology, e-services and activities that subsist and thrive on opportunity and proximity to these networks and flows. Reprogramming with new economies offers an opportunity for a new urban centre and an urbanism that is different in character but connected to CBDs and CADs. The resultant urbanism has the requisite components: industry, recreation, landscape and housing; but of a different order, aesthetic, scale and relationship. The projects propose a plausible and dynamic planning

strategy for including these industrial areas within the thinking of Melbourne.

Rather than continue the existing homogenous methods of separation and exclusion, friction between densification (of population) and intensification (of industry and distribution) can lead to a symbiotic urbanism.

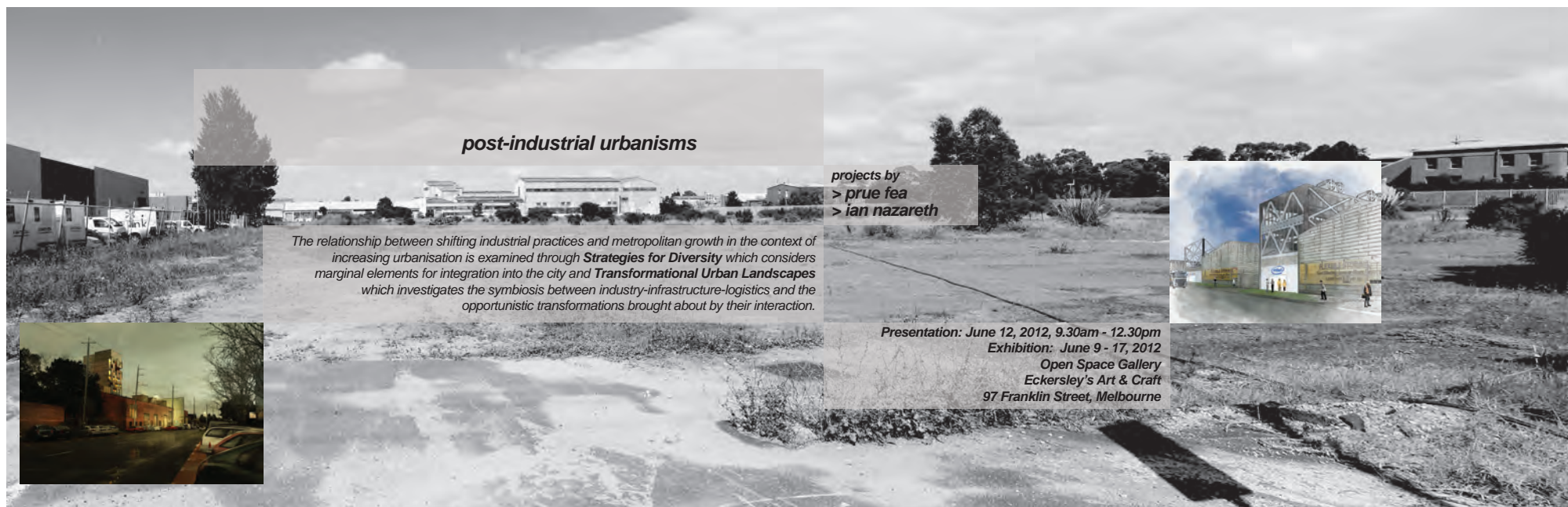




# POST-INDUSTRIAL URBANISMS

EXAMINATION - EXHIBITION





## *post-industrial urbanisms*

*The relationship between shifting industrial practices and metropolitan growth in the context of increasing urbanisation is examined through **Strategies for Diversity** which considers marginal elements for integration into the city and **Transformational Urban Landscapes** which investigates the symbiosis between industry-infrastructure-logistics and the opportunistic transformations brought about by their interaction.*

projects by  
> prue fea  
> ian nazareth

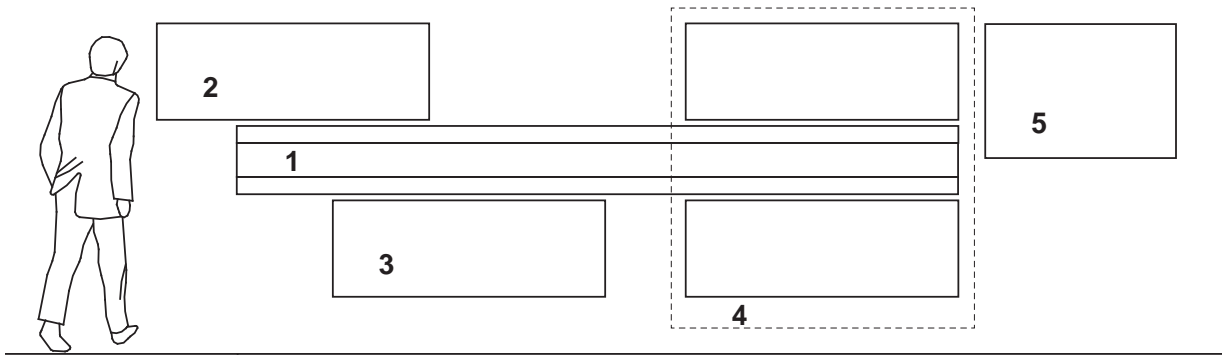
Presentation: June 12, 2012, 9.30am - 12.30pm  
Exhibition: June 9 - 17, 2012  
Open Space Gallery  
Eckersley's Art & Craft  
97 Franklin Street, Melbourne

URBAN ARCHITECTURE LABORATORY

The Urban Architecture Laboratory (UAL) is a research unit within the RMIT School of Architecture and Design, dedicated to the issues of the contemporary urban environment across multiple contexts. The UAL studies, analyses and develops speculative design propositions as sustainable alternatives to current forms of metropolitan development. The presentations and exhibition are projects undertaken as part of the post-graduate, post-professional Master of Architecture by Research - UAL stream under the supervision of Gretchen Wilkins and Simon Whitley.







02

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02: schematic organisation and layout of exhibition panels

03-08: scenes from the UAL examination

### Conceptualisation

The Master of Architecture Degree awarded through the Urban Architecture stream is examined publicly at exhibition through a presentation.

The examination / exhibition was perceived as a curatorial experiment to test 'form' and 'performance'

form: structuring the work and argument through exhibition

performance: the exhibition as a panopticon, a medium of reflection upon the body of work

The printed exhibition panels and digital slide presentation called for a flexible but definite exploration of the thesis. The duality of form and medium (printed and digital), and a structured toggle between the two, made certain the visual presentation and synched verbal performance for presentation-examination could be adapted to a coherent and comprehensible stand-alone format for the subsequent public exhibition.

The exhibition sought to locate the thesis within the broader field of architectural design research, through highlighting the underlying narrative driven by research, interlaced with studio driven projects and the final dissertation elaborating the significance and relationships of the concepts and strategies, their place within context and policies, as well as the intricacies of spatial experimentation, architectural expression and the resultant urbanism.



03

### Organisation of Content

(refer fig.02 p176)

1 The central spine is the research panel and timeline spanning the duration of candidature that was not only the driver of three subsequent projects but more critically a reference and clarification of broader themes and goals. The three horizontal bands refer to precedent studies, site analysis, contextual research as well as spatial implication of planning policy.

**2 eastlink: emerging conditions of infrastructural – industrial opportunism** derived from the nature of shifting industry and impacts of new infrastructure in Dandenong

**3 fishermans bend: (un) desirable : recovering dross** is a response to shifting port operations and inner-urban growth

4 The final project in Sunshine, **scenario city: staging the interface between industry, networks of distribution, landscape and the public domain** is spread across two panels and explores three combinations and relationships for densification of population and intensification of industrial program

warehousing : datacentres /

housing : datacentres /

distribution : disassembly /

5 Digital presentation, activated at various points in the overall presentation



04



05



06

07



08

### Examination Panel

Eli Giannini

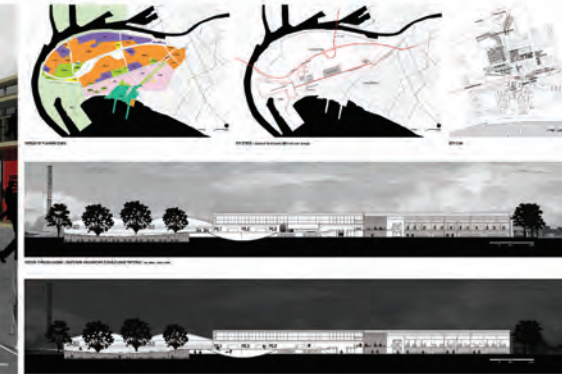
Des Smith

KerstinThompson

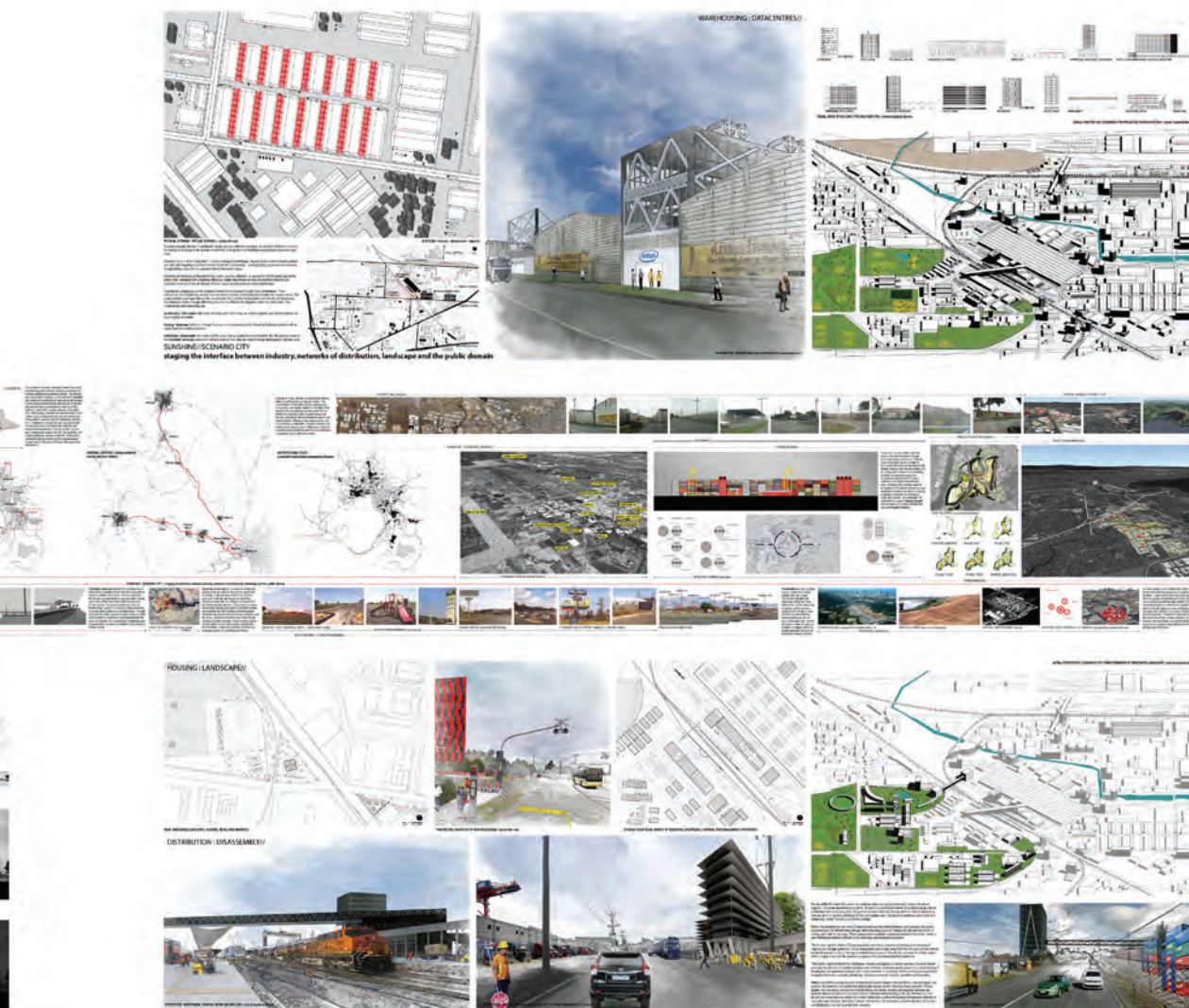
Peter Downton (Examination Chair)

09: final design and layout of exhibition panels

10-11: images from the public exhibition







# TRANSFORMATIONAL URBAN LANDSCAPES

INDUSTRY - INFRASTRUCTURE - LOGISTICS AND THE OPPORTUNITY IN SHIFTS

IAN NAZARETH - MASTER OF ARCHITECTURE  
URBAN ARCHITECTURE LABORATORY  
SCHOOL OF ARCHITECTURE AND DESIGN - RMIT UNIVERSITY - JUNE 2012













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